TEXTILE WORLD

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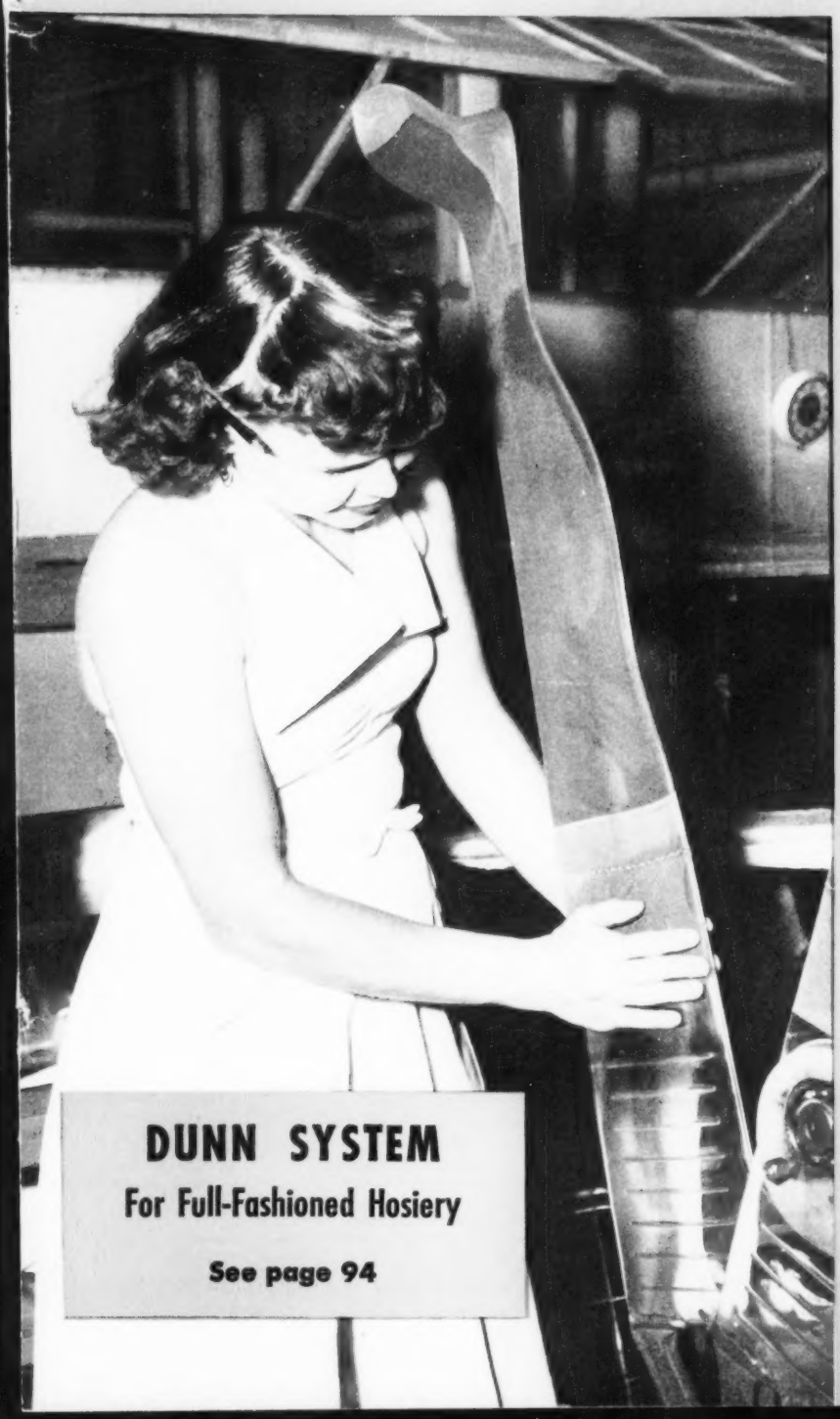

DUNN SYSTEM
For Full-Fashioned Hosiery
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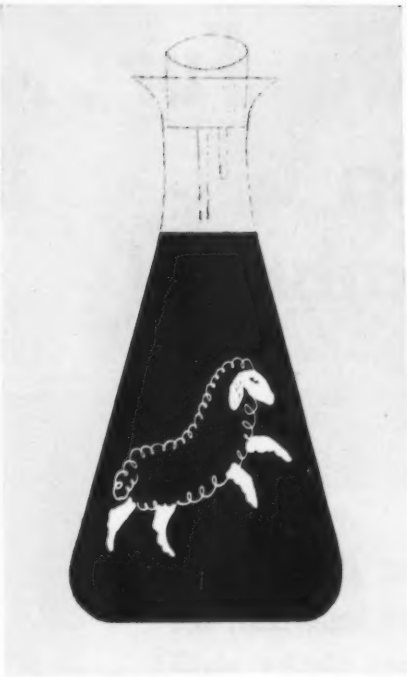

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THE Long-Range VIEW

Your Workers Don't Like Their Bosses

Practically every mill supervisor has the notion that he is highly skilled in handling people and is quite well liked by the people under him. The truth seems to be that textile-mill supervisors rate well below supervisors in other industries in skill, techniques, and the regard of their workers.

Last month on this page we discussed workers' attitudes toward their jobs, as revealed in a study in eight textile mills. This month we'd like to discuss the second group of worker attitudes—their attitudes toward their bosses.

Workers' attitudes were measured on seven scores, and in every measurement supervisors in the eight mills rated below the average for U.S. industry. It is important to keep in mind that it was the workers themselves who, collectively, made the scores. It would be a mistake for any mill supervisor to brush it off lightly as being no concern of his. It is a good bet that about the same results would be obtained in almost any mill in the country.

The seven attitude measurements, listed according to how mill supervisors rated, were:

Worst
- How complaints are received by the supervisor
- Opportunity for the worker to make suggestions

Second worst
- Attitude of the supervisor toward workers
- How the supervisor plans work

Third worst
- How the supervisor explains new things
- Job qualifications of the supervisor

Best
- How employees are disciplined

The "Best" listing here means only that the mill supervisors scored nearer the average for U.S. industry in disciplining workers than in any other of the seven measurements. In their best rating, mill supervisors were still below supervisors in other industries.

It goes without saying that mill supervisors do the best they know how. The conclusion is inescapable that they just don't know how to supervise as well as men in similar positions in other industries.

The next step in reasoning is also inescapable: Mills have not made proper education and training available to supervisors, and supervisors have not been interested enough in improving themselves to work for their own education and training.

It would be well for every mill man who has any say-so over others to study the list given here and use it as a guide in self-improvement.

Take "How complaints are received by the supervisor," for example:

In general, mills follow about the same routine in handling complaints: The fixer or section man handles it if he can; if not, it goes to the second hand, the overseer, the superintendent, and finally top management. In union mills, of course, the routine varies somewhat, but in its broadest outlines it is about the same.

However, it is important to note that it is not the routine that workers are dissatisfied with; it is the attitude of the supervisor. The study didn't show what those attitudes were, but it is almost certain that the supervisors: (a) were resentful, (b) tried to be witty, bluff, or bullying in an effort to "kid 'em out of it," (c) had a "listen-and-do-nothing" attitude, (d) passed the buck, or (e) were frustrated and didn't know what to do.

Or take the measurement "Opportunity for the worker to make suggestions."

Chances are good that the poor score on this point will surprise many mill men. We've heard many stories of problems being solved by chance suggestions from sweepers, roving men, and others who had no responsibility for the problem. We know also that most supervisors ask workers for suggestions on many problems.

But such opportunities to make suggestions are accidental, rare in the case of any individual worker, and, most important, on a prescribed subject. Free expression of opinion is not actively sought. The truth is that most supervisors don't want suggestions from workers; what they want is for the worker to shut up and run his job.

We could go down the whole list of worker-attitude measurements and point out undesirable conditions to which the average mill supervisor contributes. But it would be more to the point for each supervisor who reads this page to do it for himself. There will be a tendency, of course, to think it applies only to others. In some cases and on some of the seven measurements, it may. But it is a rare supervisor indeed who rates far above the eight-mill average on all seven points.

D. M. Thomas

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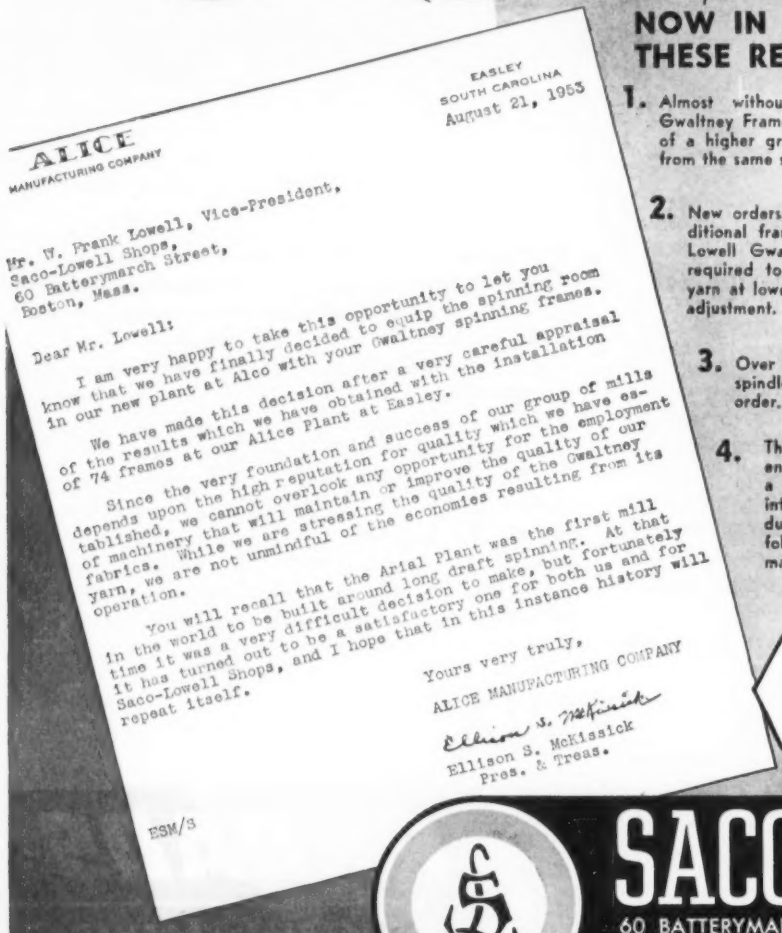

ALICE
MANUFACTURING COMPANY

EASLEY
SOUTH CAROLINA
August 21, 1953

Mr. W. Frank Lowell, Vice-President,
Saco-Lowell Shops,
60 Batterymarch Street,
Boston, Mass.

Dear Mr. Lowell:

I am very happy to take this opportunity to let you know that we have finally decided to equip the spinning room in our new plant at Alco with your Gwaltney spinning frames.

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Yours very truly,
ALICE MANUFACTURING COMPANY
Ellison S. McKissick
Ellison S. McKissick
Pres. & Treas.

ESM/3

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4. The Gwaltney Spinning Frame has proven itself under production conditions on a wide range of yarns. Its introduction into the spinning mill will no doubt produce results as revolutionary as those following the introduction of the Automatic Loom.

THIS LETTER FROM
Mr. Ellison S. McKissick
SPEAKS FOR ITSELF

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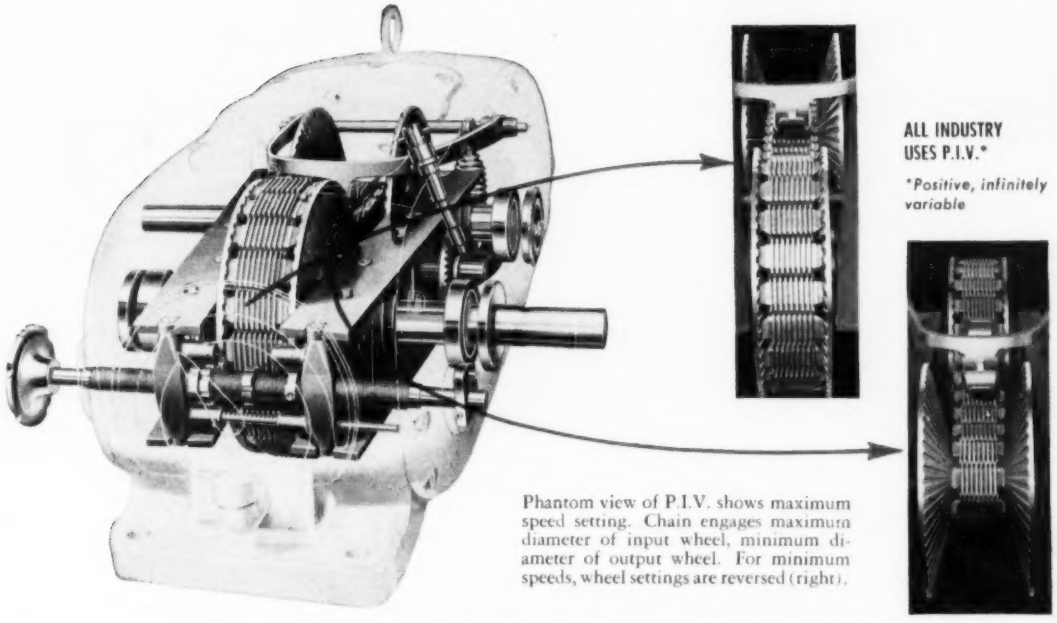

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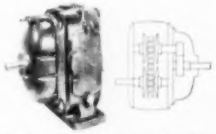
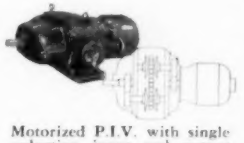
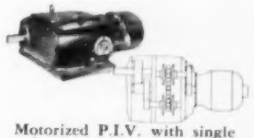


P.I.V. with single reduction input or output helical gears.

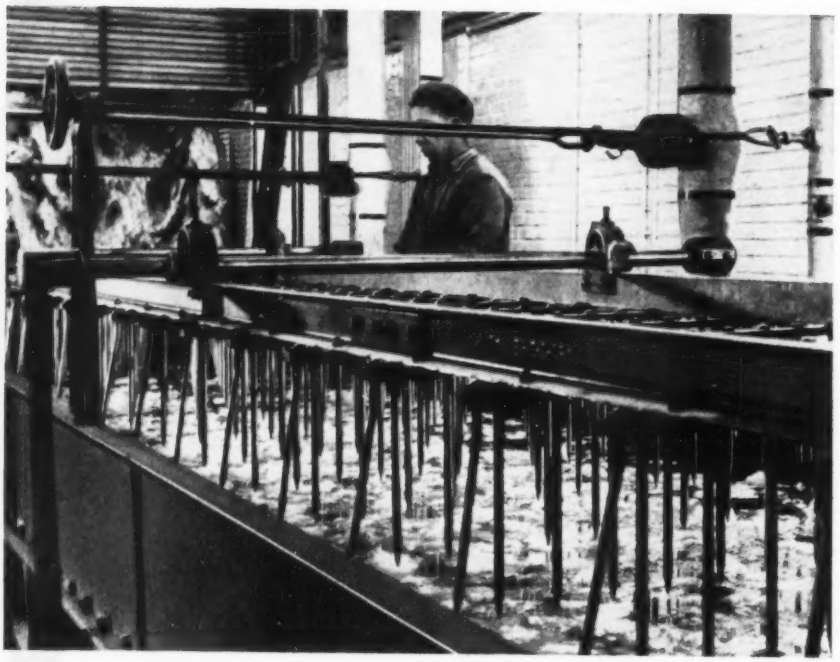


Motorized P.I.V. with single reduction input and output helical gears.



Motorized P.I.V. with single reduction input and double reduction output helical gears.

For Processing and Finishing Wools, Cottons, Silks, Synthetics



You can depend on

colgate formula 10

Try COLGATE FORMULA 10 for a better final result when you use soap • 92% Sodium Oleate • titer on the fatty acids 10° Centigrade • easily dissolved • excellent detergent effect • mild fulling action when you want it • easily rinsed at low temperatures with no bad odor left in the fabric.

Yes, you can depend on COLGATE FORMULA 10 for dozens of textile processing and finishing jobs. See your local C. P. P. representative for details, or write today to our Industrial Department.

COLGATE-PALMOLIVE-PEET COMPANY • JERSEY CITY 2, N. J. • ATLANTA 5, GA. • CHICAGO 11, ILL.

For more information, write direct or use Reader Service post card.

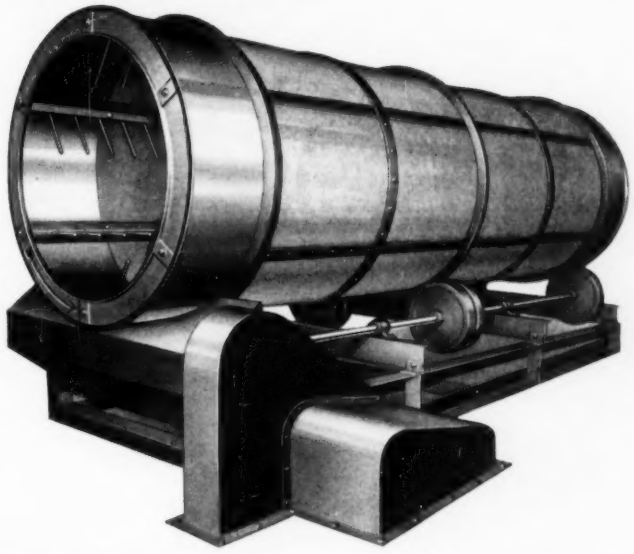
it's SARGENT for automatic, continuous, cost-saving

OPENING **PICKING** **DUSTING** **BLENDING**

any fibre — any blend

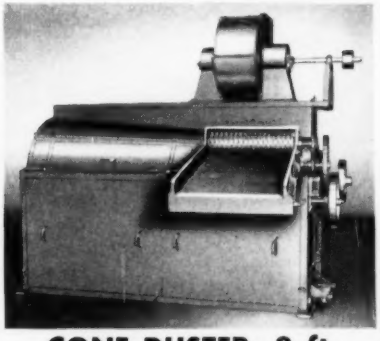
SQUIRREL CAGE DUSTER

For continuous dusting of card waste, grease wools, carpet wools. Variable speed control . . . enclosed housing . . . exhaust fans remove dust from chamber as it separates from fibre. By setting Duster on sub-base, continuous removal of waste by drag conveyor is double insurance of CLEAN fibre. The SQUIRREL CAGE is also highly efficient for blending mixes with absolute minimum of damage to fibres.



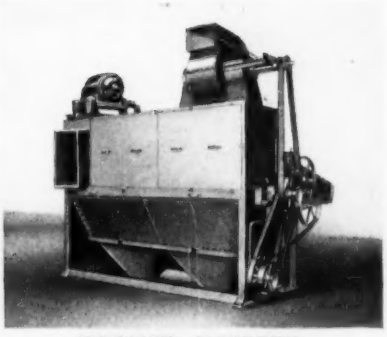
WET and DRY PICKER

Invaluable to mills running a variety of fibres and blends . . . used extensively in the synthetic fibre industry for opening and blending fibres.



CONE DUSTER - 8 ft.

Large capacity, designed for heavy duty. Unusually long taper to cone substantially increases dusting period with consequent saving in scouring time.



PICKER DUSTER

Combines opening, picking and dusting. Especially designed for opening and dusting carded, matted wools, card strips and card waste.

may we tell you

more about SARGENT Opening, Picking, Dusting, Blending equipment? Write your nearest representative or write direct.

C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1853 Massachusetts

REPRESENTATIVES: F. E. WASSON, 519 Murdock Rd., Philadelphia 19, Pa.
A. L. MERRIFIELD, 215 Grove Ave., Cincinnati 15, Ohio
W. S. ANDERSON, Carolina Specialty Co., Charlotte, N. C.
HUGH WILLIAMS & CO., 47 Colborne St., Toronto 1, Canada

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NOPCOSTAT* anti-static oils

Your present anti-static oil is doing only half its job if it does not give *"Balanced" Performance* — fiber-to-metal lubricity (coefficient of friction), fiber-to-fiber cohesion, anti-static control.

Every NOPCOSTAT anti-static oil gives you all these properties plus outstanding spreadability, freedom from yellowing and rancidity, and complete scouring out.

Give NOPCOSTATS a trial today. You'll find that years of Nopco research and experience in supplying anti-static products for the textile industry means *"Balanced" Performance* for you in processing your synthetics, woolens, worsteds, and blends.

*Reg. U. S. Pat. Off.

BALANCED PERFORMANCE

NOPCO

CHEMICAL COMPANY Harrison, N. J.

Branches: Boston • Chicago • Cedartown, Ga. • Richmond, Calif.

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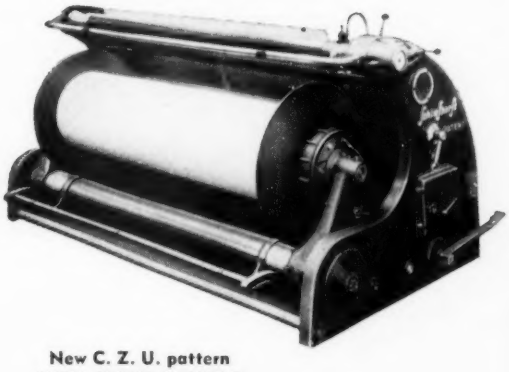
MODERN MACHINERY FOR WINDING AND WARPING

....Schlafhorst.... unionmatex



New C. Z. U. pattern
HIGH SPEED WARPER
Extraordinary production
Greatest simplicity

FULLY AUTOMATIC
WEFT WINDER (QUILLER)
AUTOCOPSER A.S.E.
for winding speeds up to
12000 revs per minute

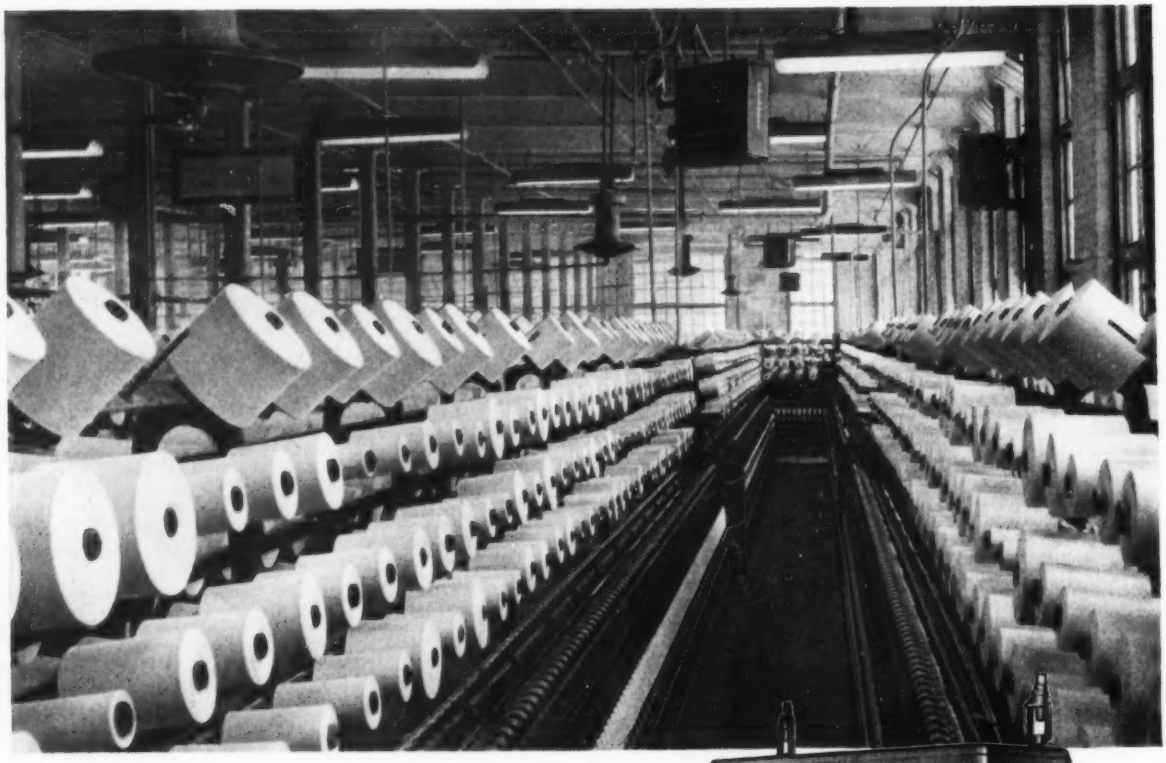
NEW GROOVED CYLINDER
CONE and CHEESE WINDER
B.K.N. PATTERN
SELF-THREADING
for winding speeds up to
1300 yards per minute

We also make CONE CREELS of various types, such as f.i. MAGAZINE CREELS and TRUCK CREELS with electric detectors of our eyeboard system.

W. SCHLAFHORST & CO · M.GLADBACH · GERMANY

Don't let temperature readings drop below

85°F. ... WARNED THE HEATING SPECIFICATIONS



Heating specifications for the Coats & Clark Inc. mill at Acworth, Ga., were clear and emphatic. Because of the nature of the material being processed, the temperatures had to be maintained at 85° F. (or better). Despite a prolonged cold spell which sent outside temperatures tumbling to record lows, Textile Thermoliers, the Grinnell Unit Heater, met the specifications to the letter. Textile Thermoliers provide maximum capacity at all times . . . their special heating element stays cleaner, assuring efficient heating with minimum servicing. No wonder this mill is another *enthusiastic booster* for Grinnell Unit Heaters.

Perhaps you saw the recent page advertisement by Grinnell, appearing in this publication, which listed more than 35 textile mills using Textile Thermoliers. On the list (though by no means complete) were such names as Cannon, American Thread, Dan River, Julliard and Springs Cotton These successful operators should provide a most persuasive reason for you to check the advantages of Thermolier Unit Heaters. The box at the right gives additional excellent reasons for taking *prompt action.*

- Parallel openings between the web tubes permit air from the fan to pass through and keep heating element clean.
- Maximum capacity provided at all times and annoying and destructive water hammer eliminated because built-in pitch of tubes and internal cooling leg assures continuous drainage of the condensate.
- Safety and durability assured with leak-proof tube-to-header construction.
- Plain thermostatic trap, the simplest and least expensive kind of trap, made practical because of Thermolier's exclusive internal cooling leg.

GRINNELL

TEXTILE UNIT HEATERS

Grinnell Company, Inc., Providence, Rhode Island • Coast-to-Coast Network of Branch Warehouses and Distributors

pipe and tube fittings • welding fittings • engineered pipe hangers and supports • Thermolier unit heaters • valves
Grinnell-Saunders diaphragm valves • pipe • prefabricated piping • plumbing and heating specialties • water works supplies
industrial supplies • Grinnell automatic sprinkler fire protection systems • Amco air conditioning systems

For more information, write direct or use Reader Service post card.

No matter what you need to lower your score on cost-per-yard of the greatest yardage of saleable cloth, C&K has the right looms . . . for single or multi-color filling mixing fabrics . . . for cottons, wools, synthetics or blends.

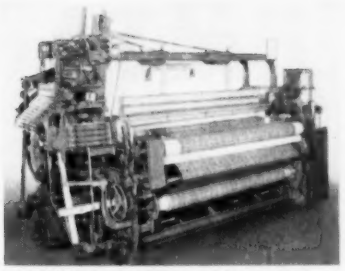
C&K has the longest line of automatic filling mixing and call box looms in the world. So, for whatever "shot" you are about to play . . . *see C&K today.*

Mark this Date Now . . . April 26-30, 1954
AMERICAN TEXTILE MACHINERY EXHIBITION, ATLANTIC CITY

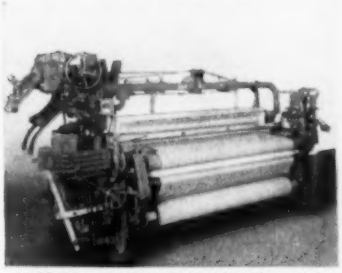
This "Invisible Trademark" Stands Back of the Trademarks of the World's Finest Fabrics . . . which are ***WOVEN*** *Fabrics*

Crompton & Knowles LOOM WORKS
WORCESTER 1, MASSACHUSETTS, U. S. A.

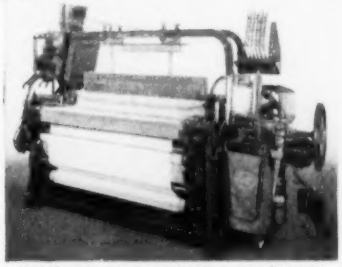
Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.



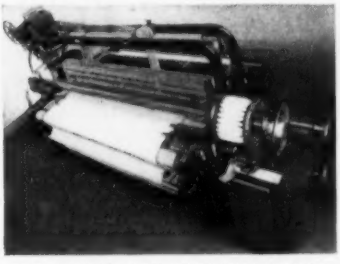
C LOOMS for widest flexibility in weaving cottons, spun rayons and blends for towels, blankets, decorative fabrics, bedspreads, handkerchiefs, shirtings, suitings, dress goods. Built in all widths . . . bobbin-changing . . . shuttle changing . . . convertible . . . tri-color . . . pick and pick . . . leno motions . . . all-purpose take-up . . . 30" beams . . . and many more C&K-engineered advantages.



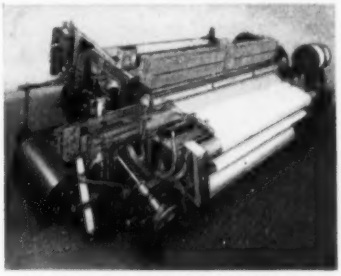
W LOOMS for unmatched versatility in weaving woolens, worsteds, upholstery and blended fabrics. Made in all widths . . . bobbin-changing . . . filling mixing . . . tri-color . . . convertible . . . pick and pick . . . and many other features.



S LOOMS are the most modern machines for weaving nylons, rayons, acetates, combinations and pure silks. Built in all widths . . . call box . . . filling mixing . . . bobbin-changing . . . shuttle changing . . . many shuttle sizes . . . pick and pick . . . Jacquard . . . and what other features do you want?



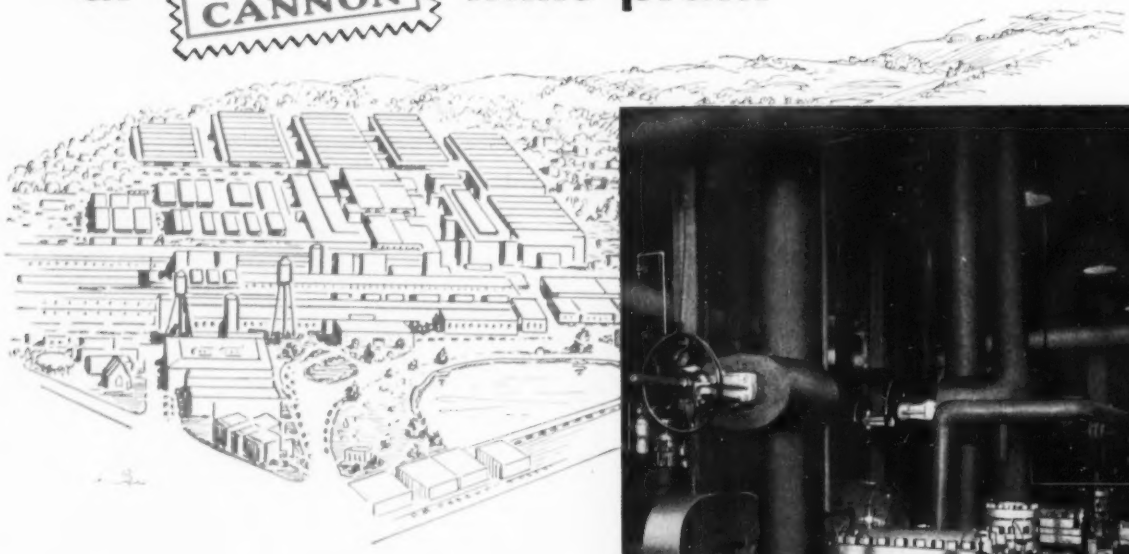
NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and Head Motion . . . one of the newest additions to C&K's *complete* line of performance-proved FM Looms.

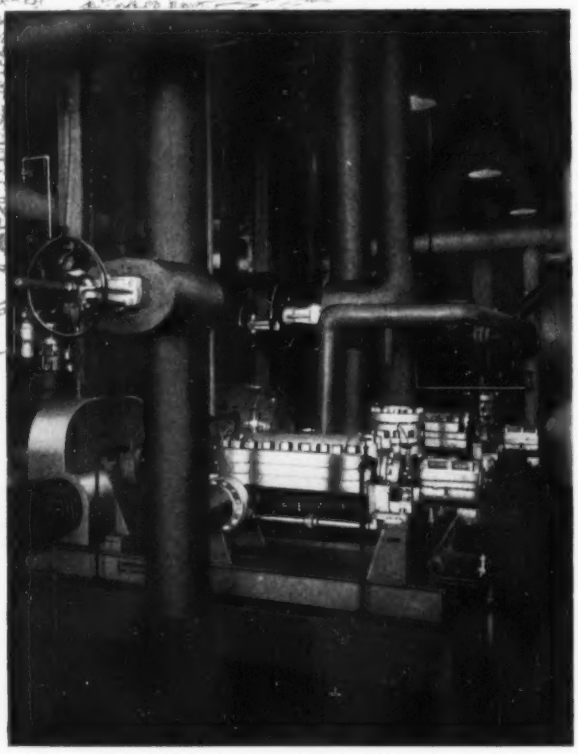


NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and End Cam. C&K also builds multi-purpose FM Looms with Call Box Feature (see W, C and S Looms below).

HMTA PUMPS

feed new high pressure boiler at CANNON mills plant





Expansion program at world famous textile mill includes installation of newest design boiler feed pumps

Cannon Mills main plant at Kannapolis, N. C.—home of world famous linens and toweling—has been expanding steadily for the past three years. To meet its increased power needs, an additional 7500 kw turbine was put on line about a year ago.

Ingersoll-Rand Class HMTA boiler feed pumps were selected to serve this completely modern generating unit. The installation, shown above, includes two four-inch, 6-stage high pressure pumps, each capable of delivering 700 gallons per minute at 1700 feet total head. The main feed pump shown in foreground, is driven by a 400 hp steam turbine, while the duplicate standby unit has electric motor drive. These HMTA pumps, with I-R Unit-Type rotor assemblies, assure maximum continuity of service at sustained high efficiency and permit substantial savings in maintenance and inspection costs.

Ingersoll-Rand offers you a complete line of advanced design centrifugal pumps in types and sizes to meet every power plant and industrial requirement. Your nearest I-R representative will be glad to give you complete information.

COMPRESSORS • DIESELS • PUMPS
AIR AND ELECTRIC TOOLS
GAS ENGINES • ROCK DRILLS
CONDENSERS • VACUUM EQUIPMENT

Ingersoll-Rand

Cameron Pump Division
11 Broadway, New York 4, N. Y.

762-10

For more information, write direct or use Reader Service post card.

"YOUTH SERUM"

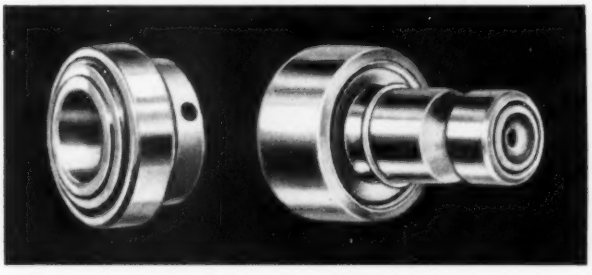
for TEXTILE Bearings

Injection relubrication . . . that's the "Fountain of Youth" for textile bearings. Developed by New Departure, this system revitalizes the sealed-in lubricant and makes it equal to the fatigue life of the bearing.

"Youth serum" (oil) is easily administered by a metering "hypodermic" oiler, equipped with a hollow needle, which can be inserted through the seal without danger of dirt getting in, or the lubricant running out.

New Departure originated the Sealed-for-Life bearing which permanently bars the elements causing abrasive wear—the number one enemy of all bearings. Teamed with the relubrication-injection device, New Departures are able to reduce maintenance and assure peak performance in hundreds of textile applications.

Shown are two New Departures designed for textile use. Adapter Bearing, left, has felt closures on both sides. Horizontal Tape Tension Pulley Bearing, right, operates on any plane up to and including vertical.



NOTHING ROLLS LIKE A BALL

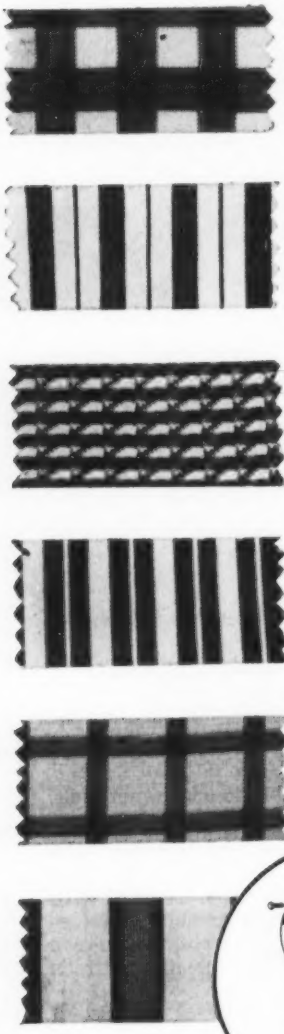
NEW DEPARTURE

BALL BEARINGS

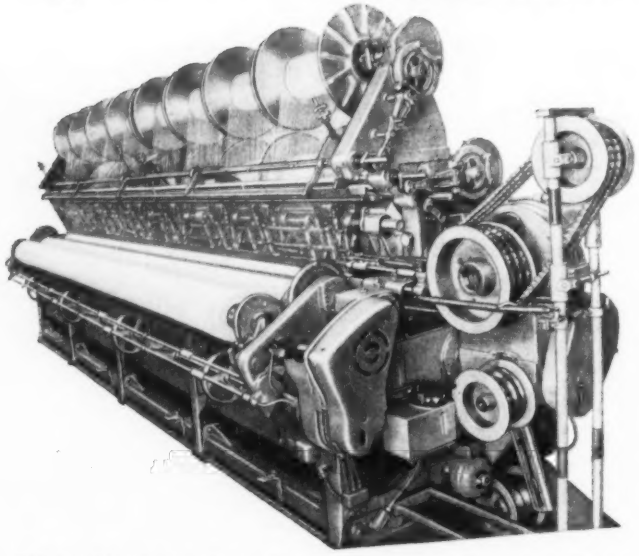
NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

Also Makers of the Famous New Departure Coaster Brake

A few 3-bar sample swatches



2-and 3-bar *Versatility* for BETTER MARKETS and HIGHER PROFITS



With this latest 2- and 3-bar Reiner High Speed Tricot Machine you are buying almost unlimited versatility for fabric pattern and weight range. As new fibres create new and profitable markets, you can readily adapt your production to any future development. With Reiner machines you buy a new high standard of perfection in tricot knitting, plus unexcelled quality at highest speeds, economy, reliability and ease of operation—all mill proved and a matter of record.

Available with pattern wheel or chain link drive. By means of split cams and other provisions the Reiner 3-bar machine can be run as 2-bar units with speeds stepped up accordingly. Automatic oil feed—Automatic beam let-off—Direct take-up and needle-down disc attachment—All gauges—Knitting widths 168" and 84" Remember: Only Reiner offers this convertible unit—plus all types of warpers and creels.

SPLIT CAMS

TO PRODUCE TRICOT AT ITS BEST YOUR BEST BUY IS REINER!

THE REINER LINE

Tricot Machines (2- and 3-bar, 84" and 168")—Simplex (Double Knit) Machines—Raschel Machines—Magazine Creels—Single Type Creels—Truck Creels—66 and 72 gauge (4 section) Full Fashioned Hosiery Machines—Automatic Schiffli Embroidery Machines (10 and 15 yards)—Bobbin Winding Machines (for Stitching or Quilting)—Ready Spare Part Service for all Reiner machines.

1903 50th Anniversary 1953

ROBERT REINER INCORPORATED

10 MINUTES FROM TIMES SQUARE

Take Bus Nos. 61 or 67, from Platform No. 60, Port Authority Bus Terminal, 41st Street and 8th Avenue, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . TELEPHONE UNION 7-0502, 0503, 0504, and 0505. From New York City call LONGACRE 4-6882.

FOUNDED IN 1903 **550-564 GREGORY AVENUE, WEEHAWKEN, NEW JERSEY**

For more information, write direct or use Reader Service post card.

Check

CHECK National Color Cards for the shades you require with the fastness properties you must have. Regularly, as dyes and colors are added to our line, unique and exclusive self-adhering, tip-in supplements are supplied to keep National Color Cards up-to-date.

CHECK National's nearest office for prompt, confidential service on matches and formulas, and for practical help on perplexing color problems. Nearby warehouse stocks assure dependable delivery of the dyes you need.

CHECK the time, effort and expense you save by phoning National Aniline *first!!*

Ensemble by Monk

National Aniline Dyes

NATIONAL ANILINE DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 RECTOR STREET, NEW YORK 6, N. Y.

Boston Providence Philadelphia Chicago San Francisco Portland, Ore. Greensboro Charlotte Richmond Atlanta Columbus, Ga. New Orleans Chattanooga Toronto

Allied Chemical

"she might have been my kid..."

"There was no time to stop, see? She comes running out from behind this parked car right under my wheels. Her hair is in pigtails, and with the sun shining on it, she might have been *my* kid. We got her to the hospital. It took 3 pints of blood to bring her around. All I have to do is remember the sound of those screaming tires—and I know why *I'm* giving blood."

Yes, all kinds of people give blood—truck drivers, office workers, salesmen. And—for all kinds of reasons. But whatever *your* reason, this you can be sure of: Whether your blood goes to a local hospital, a combat area or for Civil Defense needs—this priceless, painless gift will some day save an American life!

Business Executives!
✓Check These Questions!

If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ☐ Have you given your employees time off to make blood donations?
- ☐ Has your company given any recognition to donors?
- ☐ Do you have a Blood Donor Honor Roll in your company?
- ☐ Have you arranged to have a Bloodmobile make regular visits?
- ☐ Has your management endorsed the local Blood Donor Program?
- ☐ Have you informed your employees of your company's plan of co-operation?
- ☐ Was this information given through Plant Bulletin or House Magazine?
- ☐ Have you conducted a Donor Pledge Campaign in your company?
- ☐ Have you set up a list of volunteers so that efficient plans can be made for scheduling donors?

Remember, as long as a *single* pint of blood may mean the difference between life and death for *any* American . . . the need for blood is *urgent!*

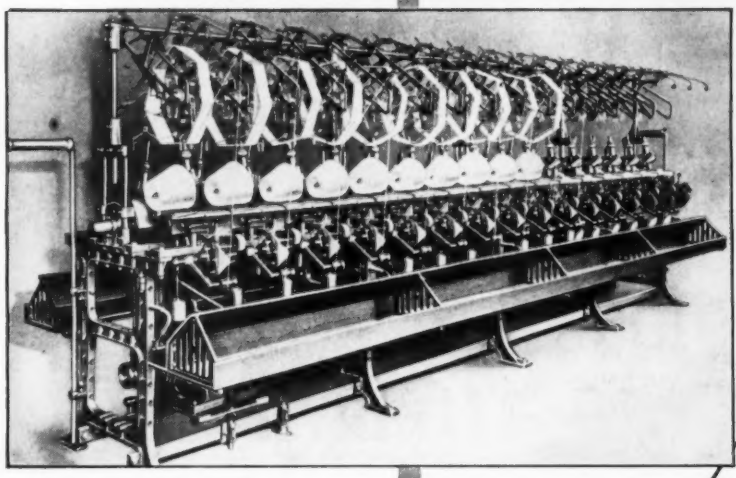
Give Blood Now

CALL YOUR RED CROSS TODAY!

NATIONAL BLOOD PROGRAM

How to wind BETTER CONES at LOWER COST

The Schweiter KM Skein-to-Cone Winder

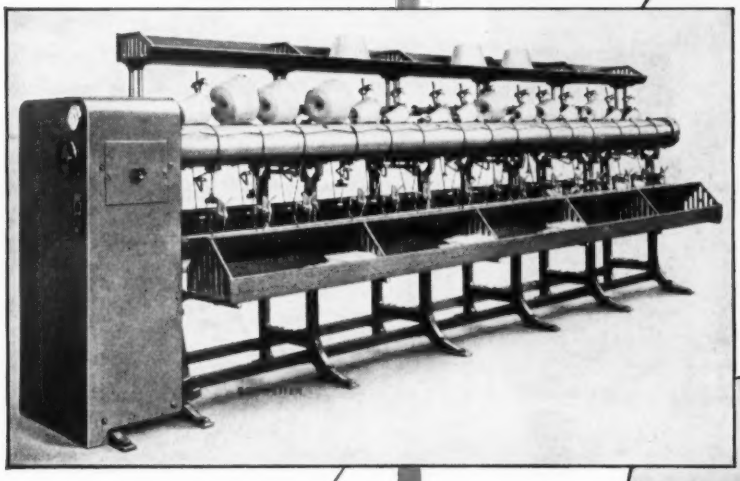


- Winds directly from skeins to cones
- No backwinding necessary
- Uniform wax application
- Eliminates knots and waste
- Better cones at lower cost
- Silent operation

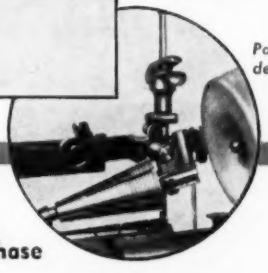
The winder consists of a variable number of units, each individually driven, each winding and waxing in the same operation from either skeins or bobbins.

"A Knotless Yarn is a Premium Yarn."

The Schweiter HKD High-Speed Cone Winder



- Special waxing device for backwinding
- Winding speeds up to 850 yards per minute
- Adjustable diameter for uniform cone size
- Rotating yarn guide device
- Low maintenance cost
- Quiet, efficient operation
- Many other exclusive patented features



Patented cone carrier with locking device and hinged cone holder.

ECONOMICAL
to operate • to purchase

SCHWEITER LTD.

HORGEN (Zurich) SWITZERLAND

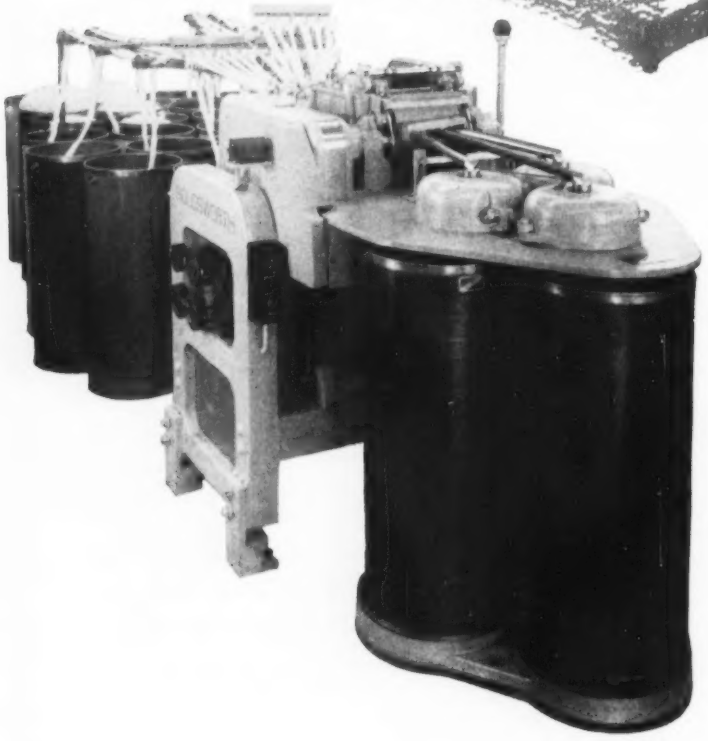
Sole Agents for the United States and Canada

AMERICAN SCHWEITER COMPANY • WHITINSVILLE, MASS.

BREAKER

2 DELIVERY

Gill Reducing is a very efficient method of reducing costs and improving sliver quality for all types of worsted, blended and synthetic fibers. All the sliver produced by this Breaker will be handled by just **one** Intermediate Reducer.



INTERMEDIATE

3 DELIVERY

The Intermediate operation is no longer a bottleneck when you have this new three delivery Gill Reducer. Production flows directly through the set as each of the three Gill Reducers produce the same total sliver weights while **operating at the same drafts.** Only Holdsworth offers this logical arrangement. We will be pleased to send you full information.

FINISHER

4 DELIVERY

All the sliver produced by the Intermediate will be handled by this quad Finisher. Full utilization of fiber, manpower and floor space is achieved. ONLY HOLDSWORTH BUILDS ALL TYPES OF GILLING EQUIPMENT FOR THE WORSTED SYSTEMS. CALL ON US.

New

HOLDSWORTH 3 DELIVERY GILL REDUCER

OPENS BOTTLENECK in worsted drawing

BALANCES WEIGHTS AND DRAFTS FOR ENTIRE OPERATION

H S

HOLDSWORTH
GILL SCREW CO., INC.
55 Sabin St., Pawtucket, R. I.

a. h.

Atkinson, Haserick & Co.

TEXTILE MACHINERY AGENTS & ENGINEERS SINCE 1823
211 Congress St., Boston 6, Mass.
1639 W. Morehead St., Charlotte 2, N. C.

For more information, write direct or use Reader Service post card.

ERECTING NEW TYPE WOOLEN TWISTER

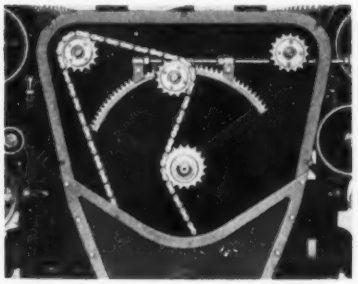
From packing cases to production . . . in nine days

This new Prince-Smith & Stells Axminster Woolen Twister was scheduled for erection by Atkinson, Haserick & Co. on February 9th. That was the day we started taking these photos.

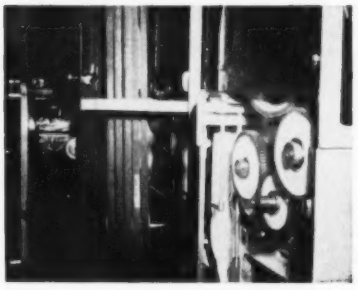
Everything was there; parts checked by the factory, motors from Schenectady, belts from Pittsburgh, bobbins from Burlington and the factory erector who worked on the job from 7 till 7. The frame was producing yarn on the ninth day, the sixth Prince-Smith & Stells machine in this mill.

In the U. S., Prince-Smith & Stells teams up with Atkinson, Haserick & Co. to give you excellent machinery and competent engineering service. Please call on us.

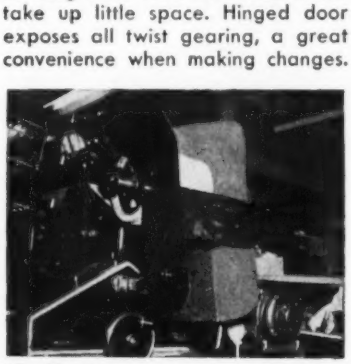
1. While the factory erector, Atkinson, Haserick engineers and mill crew were working, we took these photos of new features as they were being installed.



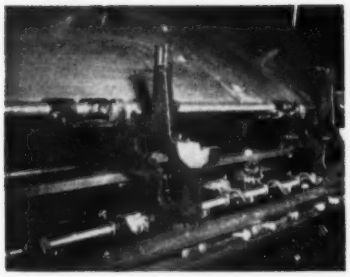
5. Reversing change speed device allows quick reversing of twist without changing tapes. Sprocket drive gives definite ratio which can be duplicated.



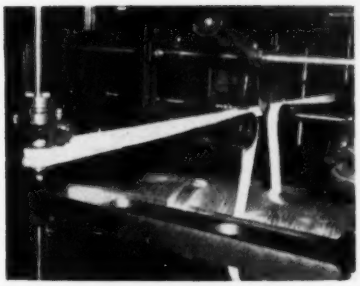
9. Long belts from overhead motor take up little space. Hinged door exposes all twist gearing, a great convenience when making changes.



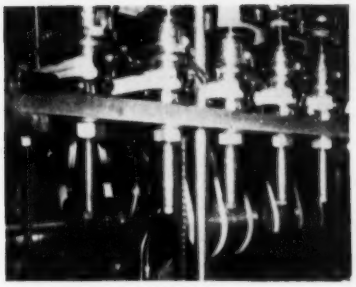
13. Operators on either side drop empty bobbins in the conveyor that runs the entire length of the frame. The bobbins are deposited in a truck at the motion end.



2. Simplified one-piece stand supports front roll, eccentric shaft and finger rod. The Oilite bushing now eliminates oiling in the yarn area.

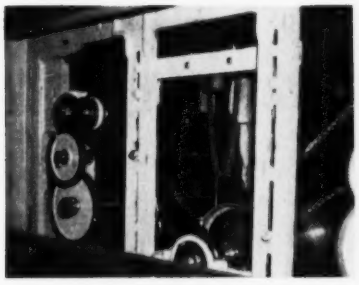


3. New double tension pulleys do away with angle settings. Tapes and pulleys are not touched when reversing twist. Pulleys run on Hoffman ball bearings.

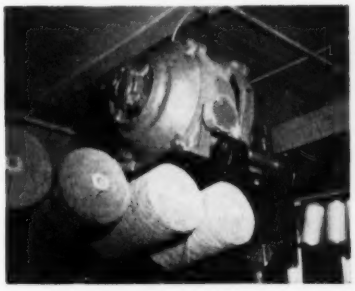


4. One tape drives two spindles with 180° contact on wharles assuring a more positive spindle speed. A noticeable reduction in power consumption is achieved.

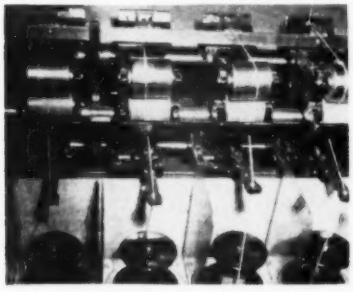
6. The lifter motion gearing is not altered when reversing twist. The new horizontal motion has Hoffman thrust bearings and is totally enclosed.



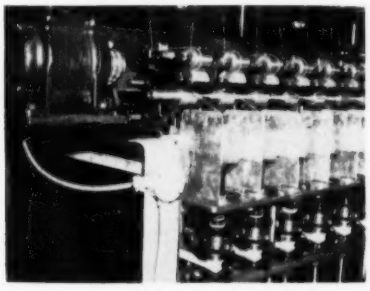
7. Each side has a separate lifter motion chain driven, fitted with shear pins. The clutch operated eccentric motion is also chain driven.



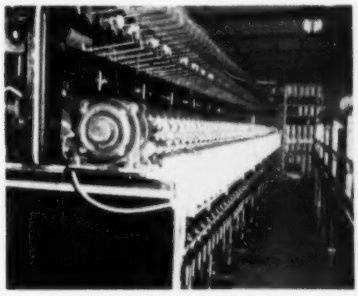
8. Motor is mounted on an overhead spring cradle to save floor space and allow a longer center drive for belts. Peg creel holds large diameter cheeses.



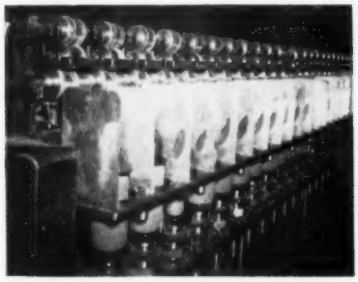
10. Trap motion instantly stops twin clutch spindle and top rollers when end breaks or runs out in creel, enabling single knots to be tied behind the rollers.



11. New type roller swingers are flame hardened at points of contact to resist wear. Middle rolls may be Accotex covered for a cushioned, more positive nip.



12. Here is the frame on the 9th day of erection. The operator liked its smooth operation and convenience. Maintenance men will not oil the spindles for 2,500 hours.



14. This is one of the many other Prince-Smith & Stells twisters running without mechanical interruption for years in this mill.

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INCORPORATING TAYLOR WORDSWORTH & CO. LTD
KEIGHLEY — ENGLAND

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Complete new lines **of Platt machinery will be announced at Exhibition at Manchester, England Haserick & Co. will present these**

Bros. cotton, synthetic and woolen the International Machinery on October 14th. Atkinson, machines in this space next month.

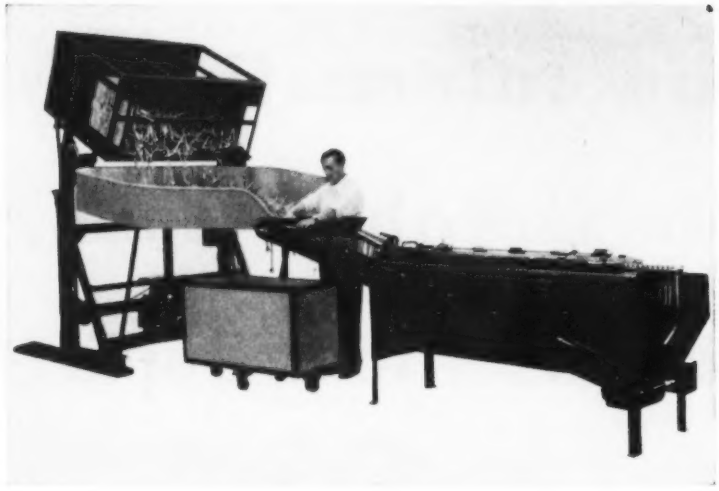
There's

NEW ECONOMY

for cotton mills in

THE NEW TYPE L

Bobbin Cleaning Machine



The modern Type L, originally designed for synthetic and silk fibers, has surpassed all expectations for cleaning cotton yarns. Cotton mills using the new Type L report equal or better production from this machine than any other quill cleaning equipment previously used.

Simplified design reduces down time and maintenance costs.

No bobbin damage at the cleaning operation results in lower bobbin replacement and better weaving. Seconds are reduced because bobbin damage caused by other cleaning machines or methods is eliminated.

Terrell engineers have been solving bobbin cleaning and handling problems for many years. Let us show you how the above savings can be effected.

THE TERRELL MACHINE COMPANY, Inc.

CHARLOTTE, NORTH CAROLINA

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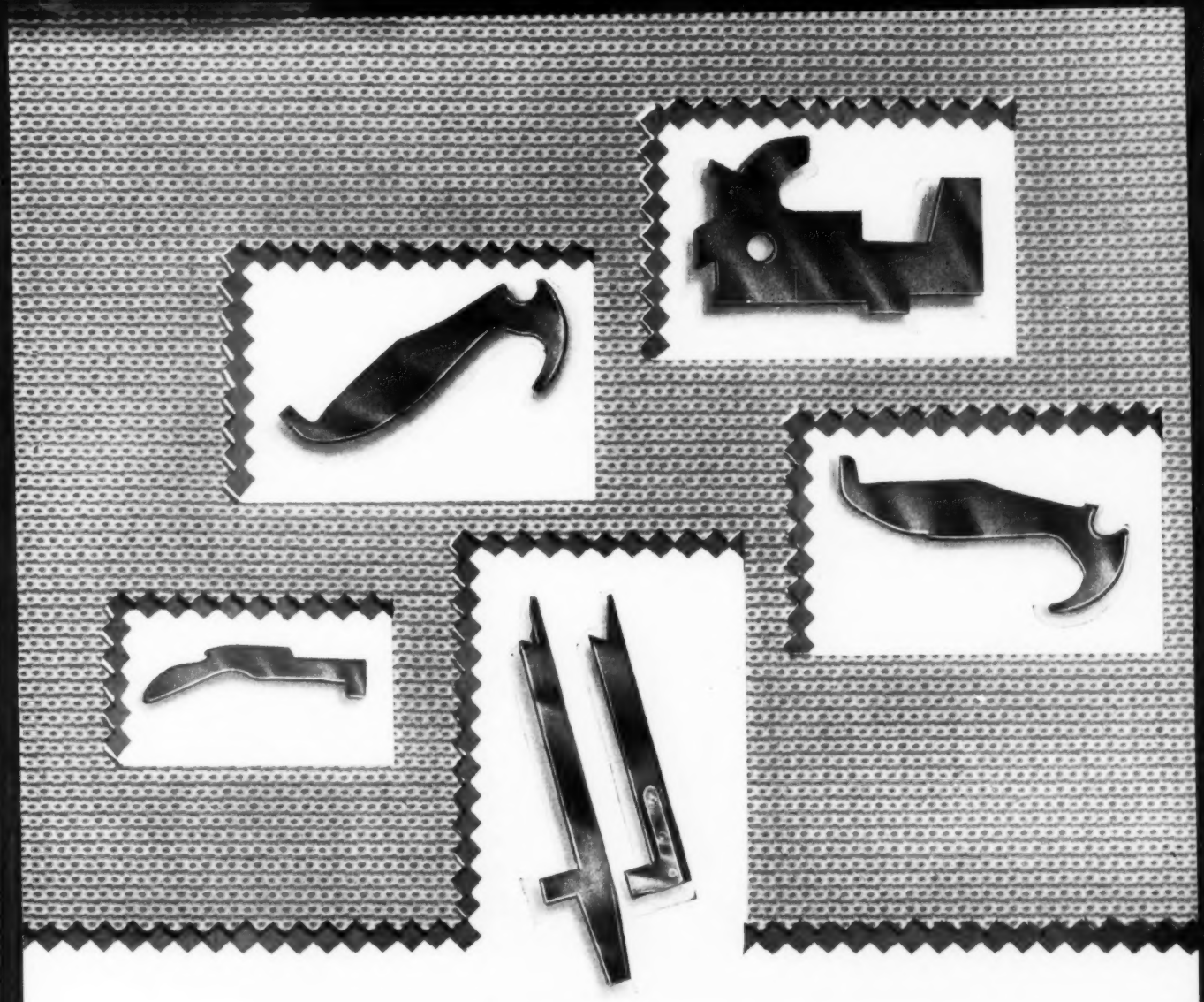

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the Old Grey Mare

is better than ~~ain't what~~ she used to be

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A typical Meadows "Conversion" consists of the installation of individual drive pulleys, ball bearing tape tension pulleys, aluminum alloy separators, silent chain drive—and high strength polished and ground steel shafting, mounted on heavy-duty, self-aligning ball bearings.

The result is lower power consumption, even tension at all times, a more uniform speed and twist, fewer ends down, and increased yarn production . . . at far less than the capital investment cost of new frames. Can be quickly and easily installed. Write or call us for estimate and particulars.

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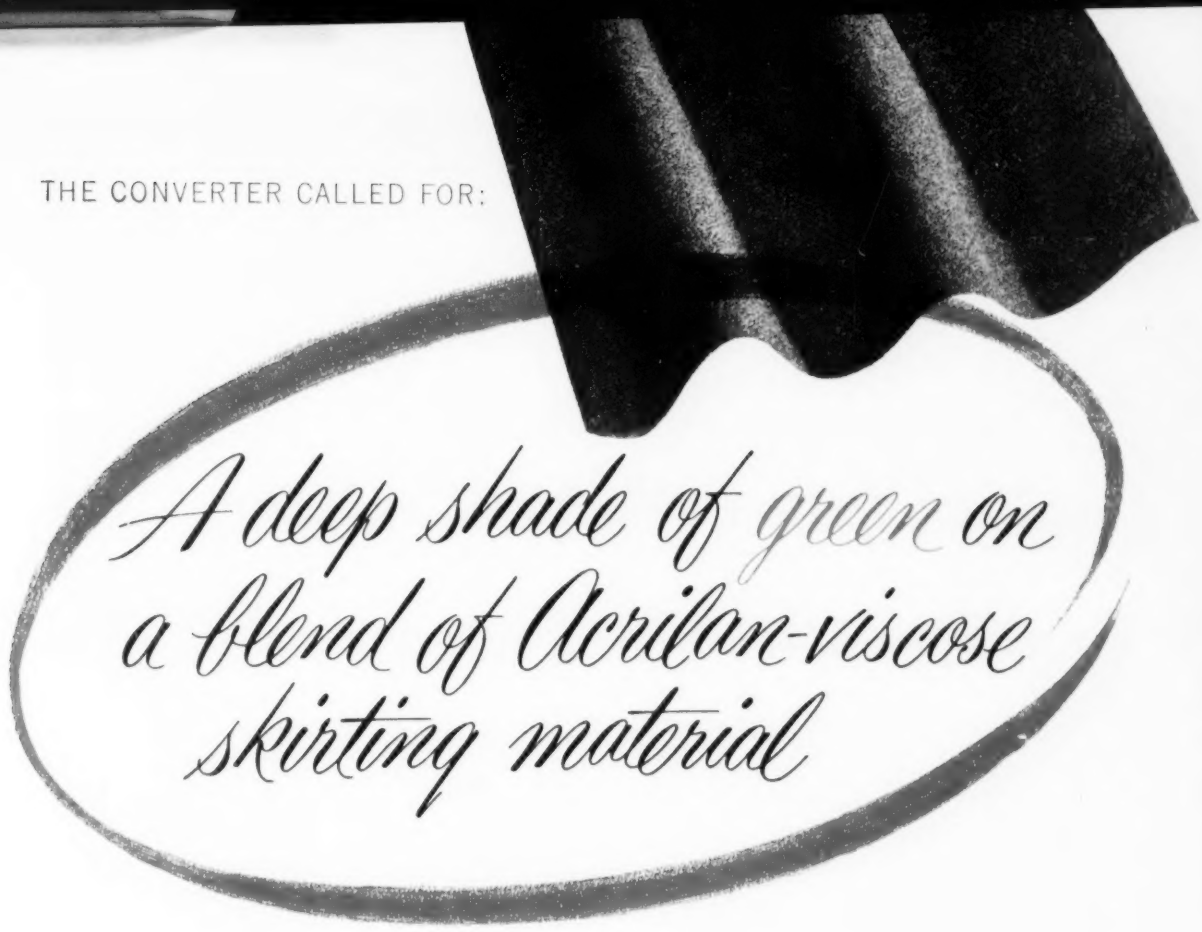
THE CONVERTER CALLED FOR:



A deep shade of green on a blend of Acrilan-viscose skirting material

The dyehouse delivered a perfect job, thanks to Sandoz' Technical Service

The problem: Acid dyestuffs generally used for deep shades on Acrilan (1952 production) tend to stain viscose. Common salt generally used in dyeing viscose will often strip the dye off the Acrilan.

Sandoz suggested: Sandoz technicians, working closely with the customer, recommended a two-bath method. Scour with 2.00% Sandopan TN at 160° for 15 minutes. Rinse. Add 2.00% Alizarine Lt. Green GSN and 0.50% Xylene Lt. Yellow 2G. Raise to a boil for 1½ hours. Since it is desirable to keep acid to a minimum, add only 1.50% sulphuric acid in several portions. Rinse and soap off. These acid dyestuffs have the highest affinity for Acrilan, while the staining of viscose is prevented by scouring, rinsing and soaping.

Cross-dye for one hour at 200° using 1.00% Cuprofix Yellow GL, 2.08% Cuprofix Blue FGL, and 30% Glaubers salt instead of common salt which would strip the dye off the Acrilan.

* * *

If you're confronted with a problem in the dyeing or treating of any of the new synthetics or blends, call on Sandoz' Technical Service. Our technicians may be able to help you in solving it. Call your nearest Sandoz branch in Hudson, Mass.; Fairlawn, N. J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal or Toronto. Write to Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N. Y.

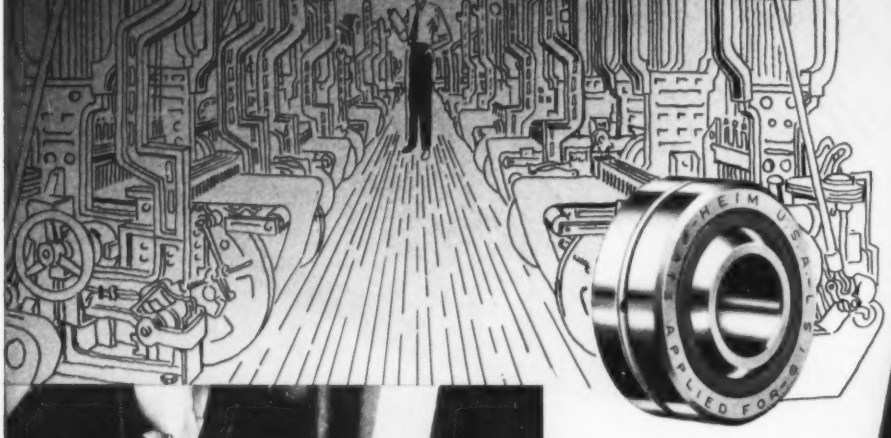
SANDOZ

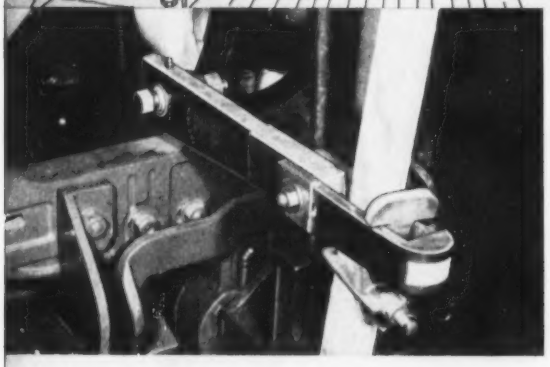
SANDOZ

THINKS AHEAD WITH TEXTILES

HEIM *Unibal*

SWEEPSTICK





The Heim Unibal Spherical Bearing, which is pressed into a rubber-bonded fabric sweepstick, is the real reason why the Heim Sweepstick delivers such smooth, trouble-free pick action. There is just no possibility for the stud hole to enlarge and cause trouble. The bearing is self-aligning and long wearing.
Put the Heim Sweepstick to work on your looms now and get set for longer, trouble-free operation with no "down time" due to sweepstick failure.

Write for bulletin and prices.

THE HEIM COMPANY
FAIRFIELD, CONNECTICUT

FABRIC WITHOUT WEAVE, shown here as a vinyl film backing, is made by bonding fibers together with CHEMIGUM LATEX plus other materials. High gauge-weight ratio, multi-directional strength, flexibility and low cost are the results. Photo courtesy Wellington Sears Company.

NON-WOVEN FABRIC *gets strength*

and softness through CHEMIGUM LATEX

FEATHER-LIGHT, leather-strong, rubber-flexible and satin-soft is Lantuck by Wellington Sears. A "non-woven" fabric, it is made by bonding together textile fibers to form a smooth, uniform mat. Random distribution of the fibers accounts for its high strength in all directions and its soft, pliable "hand."

Big factor in the making of Lantuck is CHEMIGUM LATEX by Goodyear. CHEMIGUM LATEX is a water dispersion of a butadiene-acrylonitrile copolymer. It is used in the bonding agent to impart permanent adhesion, flexibility and softness.

Non-woven fabrics are but one of many textile products using CHEMIGUM LATEX. It is being tried and used in all types of permanent finishes, as a vehicle for dyes and inks, in backings for rugs, in adhesives for laminates and as a delustering agent.

If your product needs improved drape, increased strength, soap and solvent resistance, slip resistance or dimensional stability, look into CHEMIGUM LATEX. It is easily, safely and economically processed on conventional equipment. For details and samples, write to: Goodyear, Chemical Division, Akron 16, Ohio.

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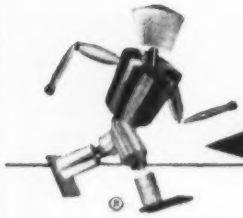
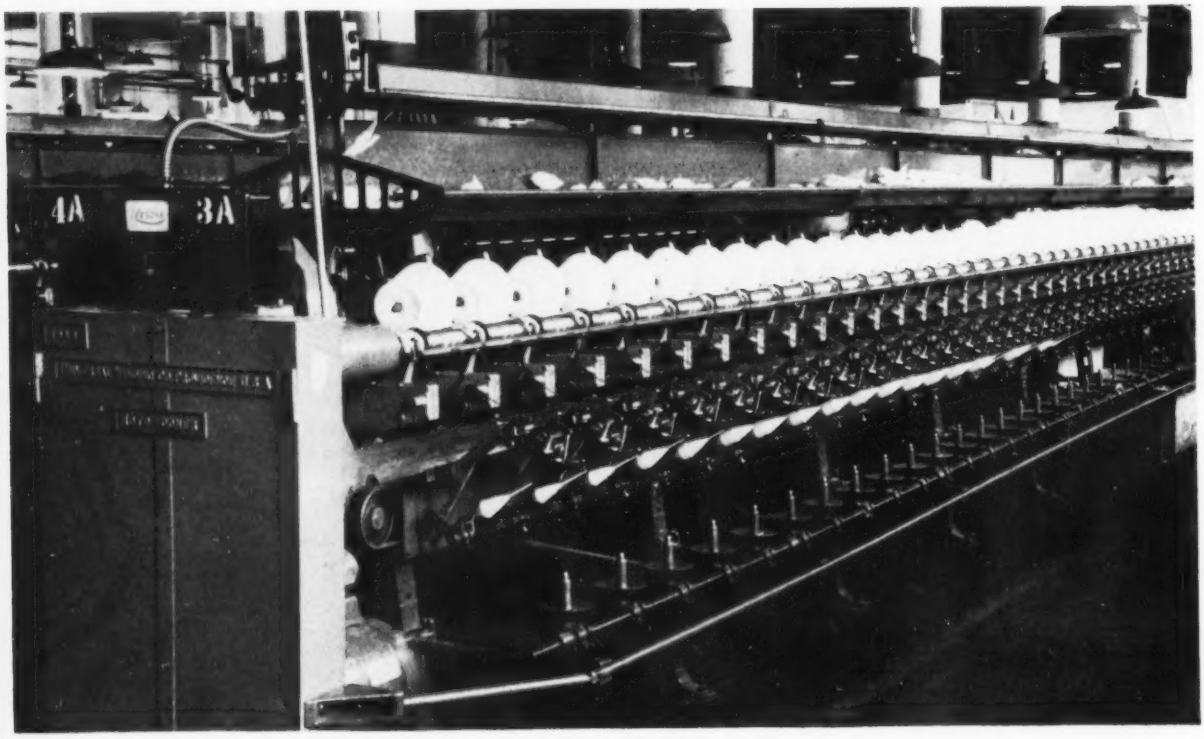


LEESONA® REPORTER

How the ROTO-CONER® Improves Winding, Cuts Costs



Part of a typical Roto-Coner installation.

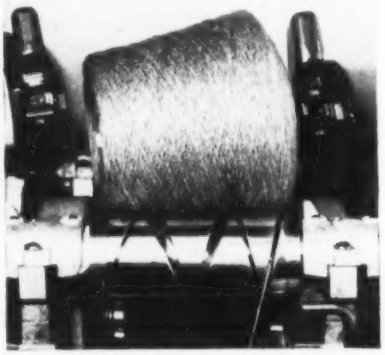
Produces Many Types of Open-Wind Packages

The popular Roto-Coner, Universal's manually operated winding machine, winds yarn onto paper cones for knitting and wood cones for weaving. It also winds onto paper tubes for sales yarn; perforated tubes and Franklin springs for dyeing; and wood tubes for twisting. It can be equipped to wind cotton, spun rayon, woolen, worsted linen and all spun yarns. In each case, it produces open-wind packages that are superior in every detail.

A Great Step Forward

Key feature of the Roto-Coner is the Rotary Traverse — one of the greatest advancements ever made in winding machine design. Found only in the Roto-Coner, it is the direct source of many important advantages.

The Rotary Traverse is a combination driving drum and traverse guide. While the drum drives the package, its helical grooves direct the yarn. By performing both of these operations, which in all other winding machines require many moving parts, it reduces wear to a minimum, eliminates vibration and enables the winding of better packages.



An open-wind cone being built up on a Roto-Coner. The grooved Rotary Traverse, an exclusive Universal advancement, is shown.

The Rotary Traverse comes in four different groove patterns, to wind different shapes of packages. Each pattern is standard for its type of work and is designed to give the one best angle of wind for all numbers. No settings are required for traversing the yarn, no change of speed is necessary when changing to coarser counts. Together with the elimination of many rapidly wearing parts, these facts assure that every package is produced under uniform winding conditions.

Packages That Pay Off

On the Roto-Coner, the cone holder arm is pivoted from below, and the package rests on the back of the roll. As the package builds up, the increasing weight of the yarn does not add pressure to the

For more information, write direct or use Reader Service post card.

inside layers. Also, since the package lies slightly across the axis of the Rotary Traverse — not parallel with it — the driven part of the package is near its center, which removes pressure from the ends. The result of this improved tensioning is soft packages of uniform density from inside to outside diameter and from end to end.

Roto-Coner winding also preserves yarn quality by protecting its finish and keeping it freer from dirt and inequalities. Regardless of yarn size or source of supply, all Roto-Cones have a minimum number of winds, with perfect lay of yarn — ideal for free delivery.

Cost-Cutting Performance

A large cotton yarn spinner reports that his annual repair parts cost has averaged less than $\frac{1}{4}$ of 1% of his original investment. This is typical of the reports received on Roto-Coner economy from textile mills engaged in every type of winding. Clean, quiet-running Roto-Coners are preferred by operators for their ease of handling and by mill executives for their proved ability to boost production and cut costs.

Savings "Snowball" with Uniflex Replacements

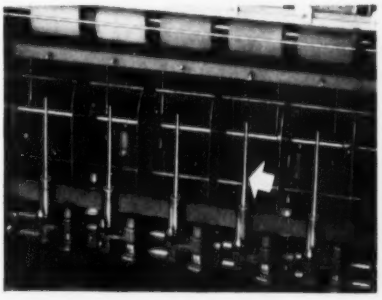
Each New-Type Spindle Cuts Power Costs

When you trade in your family car, you certainly want the latest and best-performing model you can get. And when old-fashioned machine equipment wears out it's simple logic to make replacements with the newest, most efficient developments on the market.

In the case of uptwister spindles, for example, old-type, plain bearing spindles should always be replaced with Universal Uniflex Roller Bearing Spindles. Their ultra-modern design means better performance and sure savings.

Such savings are both immediate and long-range. Because as each Uniflex goes to work it cuts down power consumption. And with each one that is added later, savings grow like a rolling snowball.

Uniflex economy has been proved by thorough field testing — which shows power savings over plain bearing spindles averaging 15% and running up to 36%. In addition, Uniflex Spindles greatly reduce oiling cycles and other maintenance, and their elimination of free oil means cleaner yarn. Systematic replacement with Uniflex Spindles is a sure way to improve product quality and cut production costs.

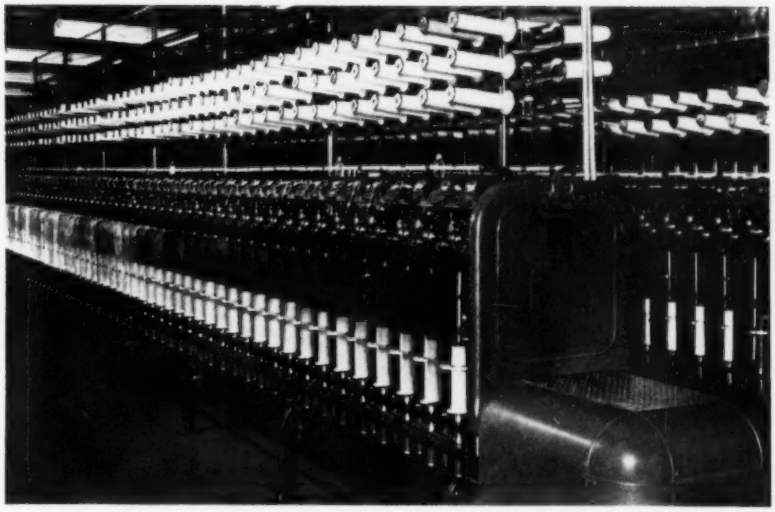


Close-up of an uptwister, showing where old-type spindles have been replaced with Uniflex.

Two Big Advantages of the Model 10 Ring Twister

1. Unbeatable Flexibility

Daily, in textile mills throughout the country, Universal Model 10 Ring Twisters are demonstrating their ability to produce the broadest variety of yarns. This includes plied yarns of cotton, woolen and worsted, as well as glass, spun rayon, filament rayon, nylon and combination yarns. In this rugged, ultra-modern machine, uniform twist is assured by such features as: constant free delivery . . . accurate tensioning . . . constant yarn speed delivered by feed rolls . . . smooth traverse of ring holder rail . . . rigid mounting of rings and ring holders . . . one endless, lapless belt for uniform spindle speed.



A Model 10 Ring Twister plying glass yarn onto taper-top bobbins.

2. Exclusive Automatic Stop Motion

Only the Model 10 Ring Twister has automatic stop motion for each end in the ply. Spindle and feed roll are instantly stopped at any break or runout. Drop ply cannot get into the packages, roller laps are eliminated and ends are tied in the singles before twist is inserted — resulting in smaller, less troublesome knots.

23.3.14

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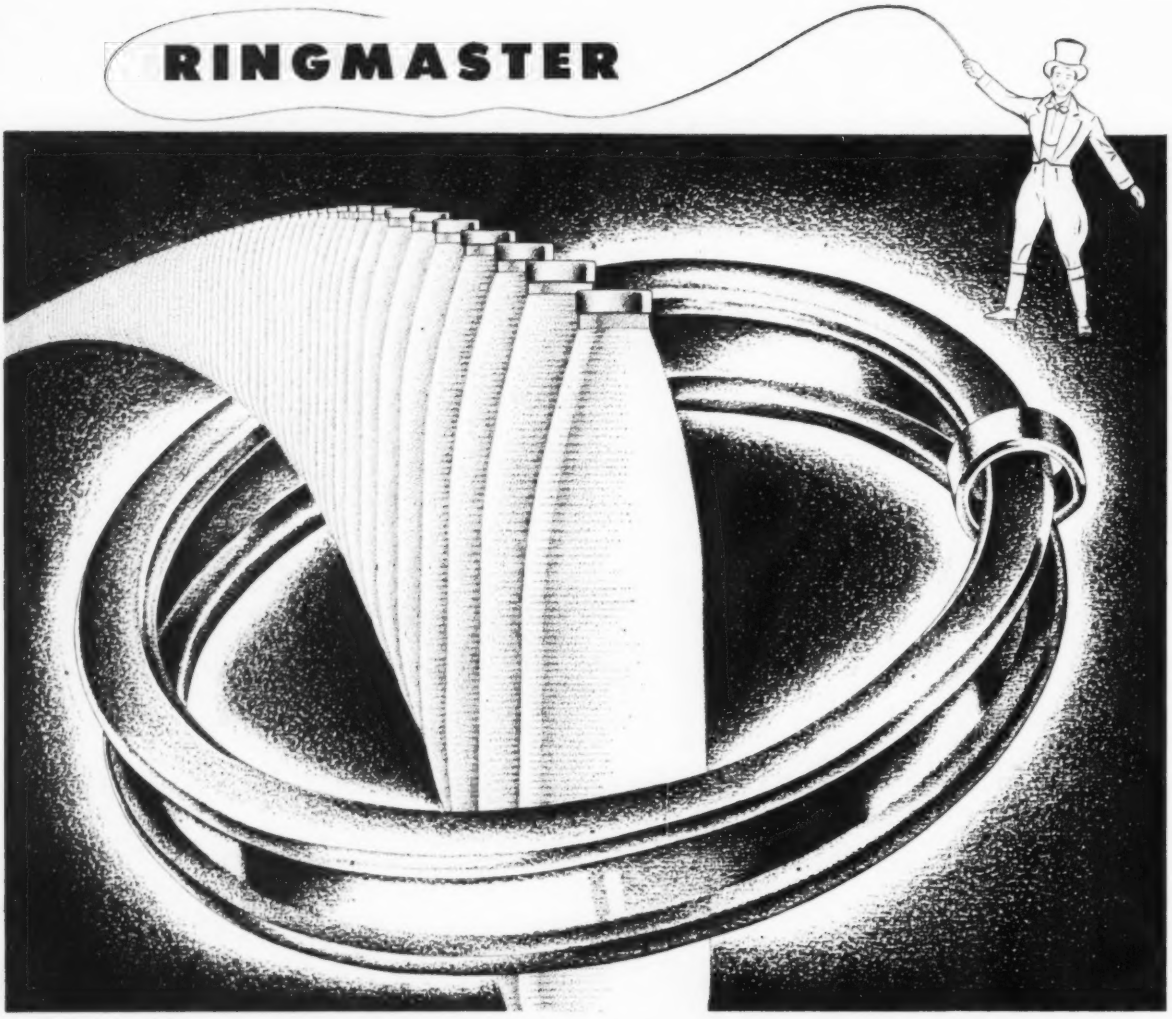

. . . of more than 12,000,000 smooth-running spindles!

TODAY, Victor Travelers ride the rings on more than 12,000,000 spindles, after 50 years of steadily increasing preference among the nation's ablest millmen. The reasons are clear.

First, consider cost. Since the true measure of a traveler's worth is in the number of pounds of yarn it spins or twists in its lifetime, millmen prefer those that *cost the least per traveler-pound.*

Victor Travelers consistently deliver more pounds of top-quality yarn — under the toughest conditions — at the lowest possible cost per traveler-pound.

Second, consider design. Whether a mill runs conventional fibers, synthetics, or blends, there is always one traveler that is *right* for the work being processed. Victor service saves you valuable time in selecting that *right* traveler — in setting up the smooth-running spinning or twisting desired.

You'll find that a mill-trained Victor Service Engineer has the ability to analyze problems quick ly — to recommend the *right* traveler. Also, whatever its description, you can be sure its available among the more than 15,000 Victor styles and sizes.

One more reason . . . Victor service is prompt as well as dependable. Try it. Just phone, wire, or write the nearest Victor office.

VICTOR Ring Travelers

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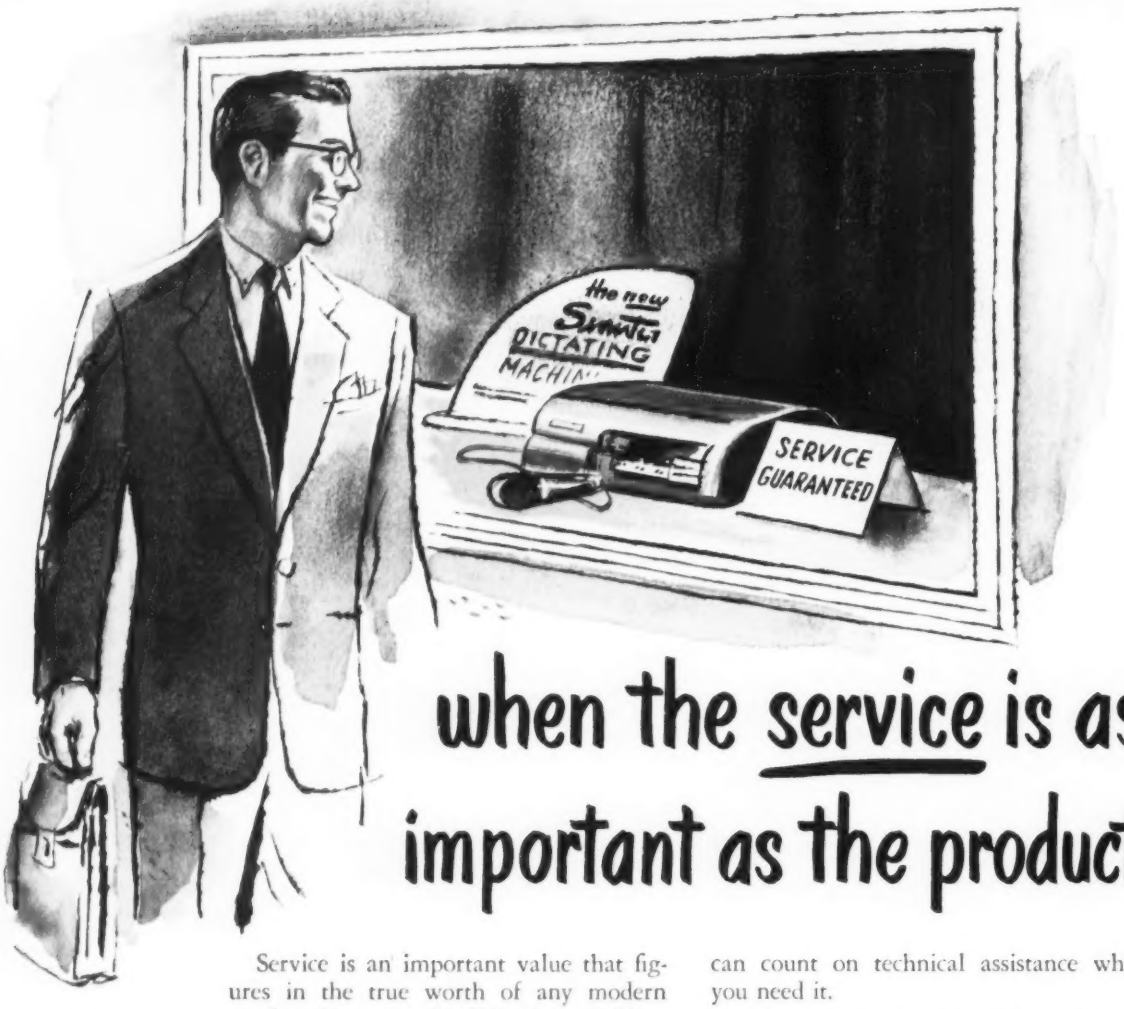


when the service is as important as the product

Service is an important value that figures in the true worth of any modern product. For example: Dictating machines have become well-nigh essential to the smooth flow of business correspondence — but who could afford one, without service to keep it in operation?

Just so with card clothing: Quality alone is of little avail — unless the product is quickly and conveniently obtainable, unless you get the best type of clothing for your purpose, unless efficient installation service is near at hand, and unless you can count on technical assistance when you need it.

Ashworth Service, like Ashworth Card Clothing, is tops. Our 3 factories, 6 repair shops and 7 distributing points — all strategically located in major textile areas — assure adequate supply, convenient repairs, prompt deliveries.

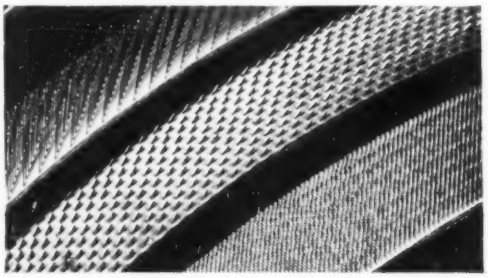
Our staff of practical card men can also give you technical advice, survey your cards and recommend necessary repairs. Write to our nearest plant for further information on Ashworth Service. No obligation!

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

Fall River*†‡ Worcester‡ Philadelphia*†‡ Atlanta†‡
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)

* Factory† Repair Shop‡ Distributing Point



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3 FACTORIES **6** REPAIR SHOPS **7** DISTRIBUTING POINTS

EACH A SPECIALIST IN HIS OWN FIELD : INGOLSTADT SPINNING MACHINERY FOR COTTON-WORSTED-CUT RAYON. * * * * * * * * * * * * * MAK CARD SETS, SELF-ACTING MULES, RING SPINNING FRAMES. * * Schlafhorst MACHINES FOR WINDING, WARPING AND SECTIONAL WARPING. * Sucker SIZING MACHINES, SIZE MIXING AND COOKING INSTALLATIONS. * B. Thies DYEING-AND BLEACHING PLANTS FOR YARNS AND CARD-SLIVERS OF ALL KIND. * * * * * * Astra WEAVING MACHINES FOR COTTON-, WOOL- AND SPECIAL FABRICS e.g. FELT-CLOTHS, JACQUARD-WEAVING MACHINES. * * * * * JOH. KLEINEWEFERS SÖHNE CALENDERS, MANGLES, PRINTING-, MERCERIZING-MACHINES, CONTINUOUS BLEACHING AND DYEING PLANTS. * * * * * * * * MONFORTS FINISHING MACHINERY, MAKING-UP MACHINERY FOR ALL KINDS OF CLOTH. * * * * * * * * * *

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Century TEXTILE MOTORS

BREATHE CARD ROOM LINT without Choking

Troublesome lint and textile dust flow right through Century Textile Motors. The motors have specially designed, wide, smooth air passages that allow lint to pass through without clogging. Century Textile Motors are equipped with large fans to assure a strong blast of cooling air over the bearings and around the windings.

Just as Century Textile Motors are specially made for trouble-free, low-maintenance operation, a complete line of general purpose Century motors are available to meet the other needs in your mill.

Century motors are made in sizes from 1/8 to 400 h.p., in a wide variety of types including drip proof, splash proof, totally enclosed and explosion proof. Selective speed drives 1 to 150 horsepower.

Specify Century motors for *all* your needs.

Century C MOTORS

Century 1½ h.p. textile motors give dependable performance, unhampered by the lint from these cotton cards.

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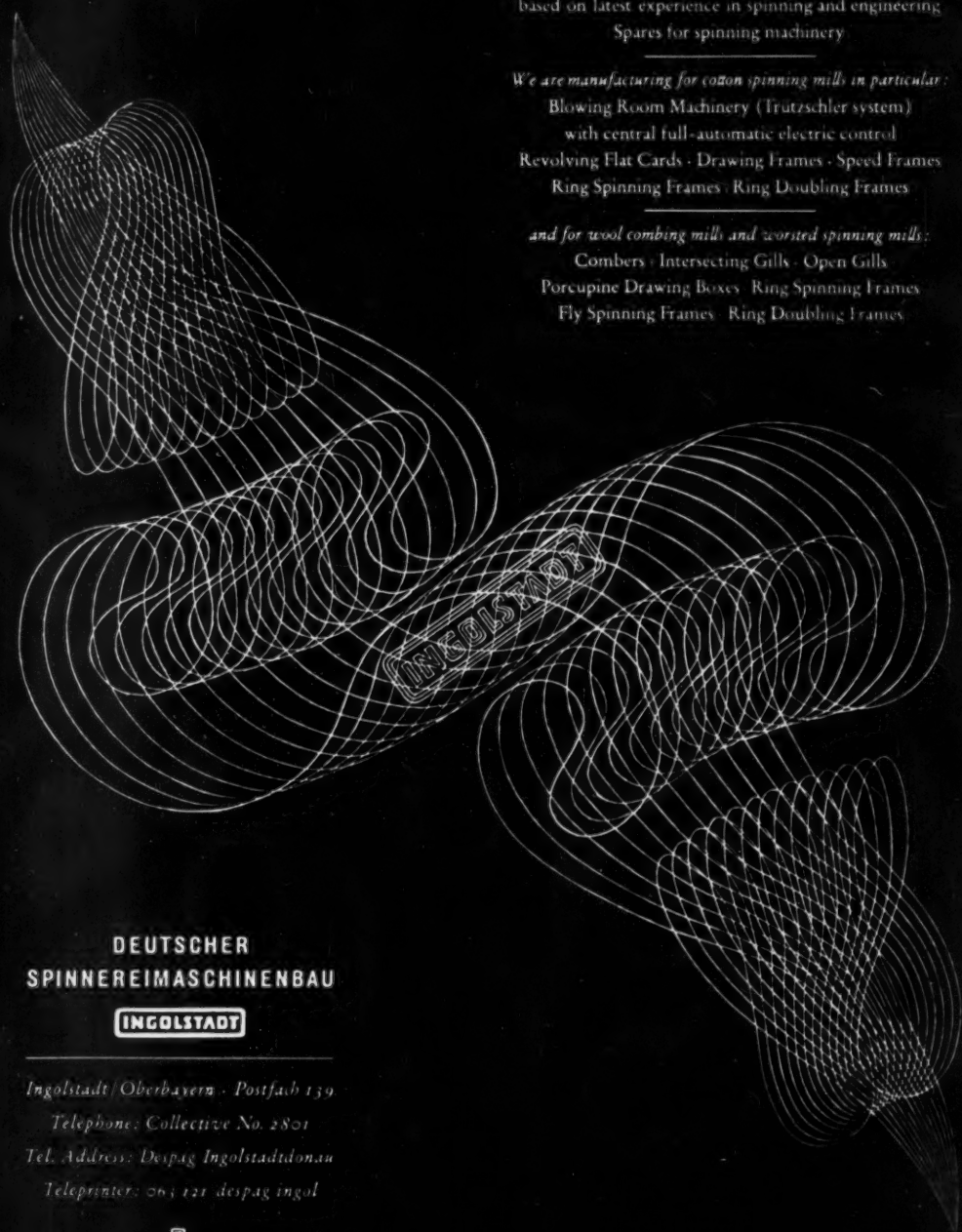
FOR COTTON, STAPLE FIBRE AND WORSTED
Design and supply of complete spinning plants
based on latest experience in spinning and engineering
Spares for spinning machinery

We are manufacturing for cotton spinning mills in particular:
Blowing Room Machinery (Trützschler system)
with central full-automatic electric control
Revolving Flat Cards · Drawing Frames · Speed Frames
Ring Spinning Frames · Ring Doubling Frames

and for wool combing mills and worsted spinning mills:
Combers · Intersecting Gills · Open Gills
Porcupine Drawing Boxes · Ring Spinning Frames
Fly Spinning Frames · Ring Doubling Frames



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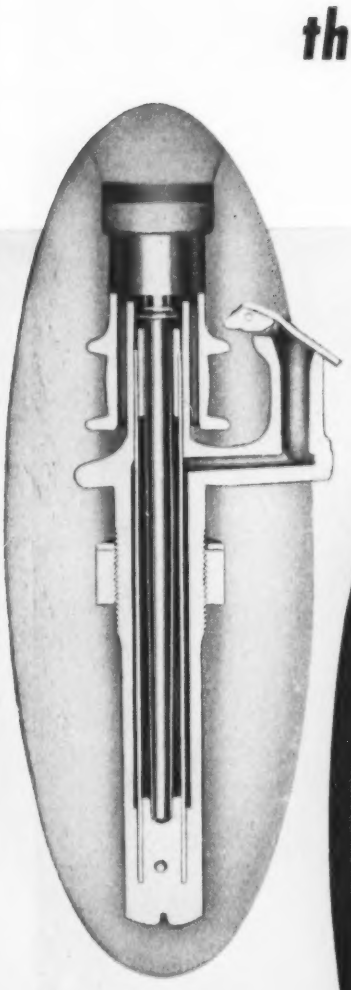
You can reduce spinning costs

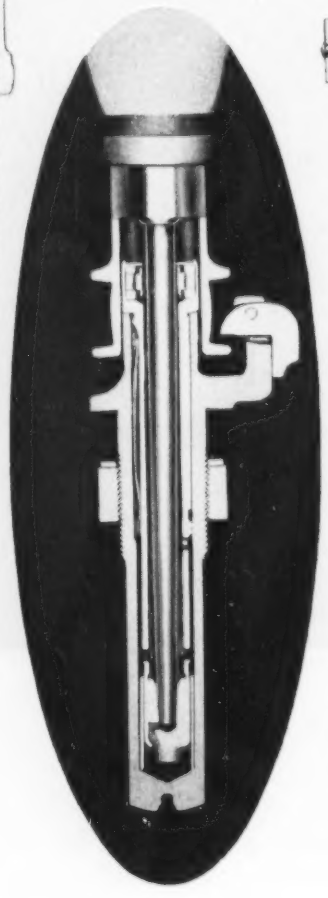
with Gulfspin,

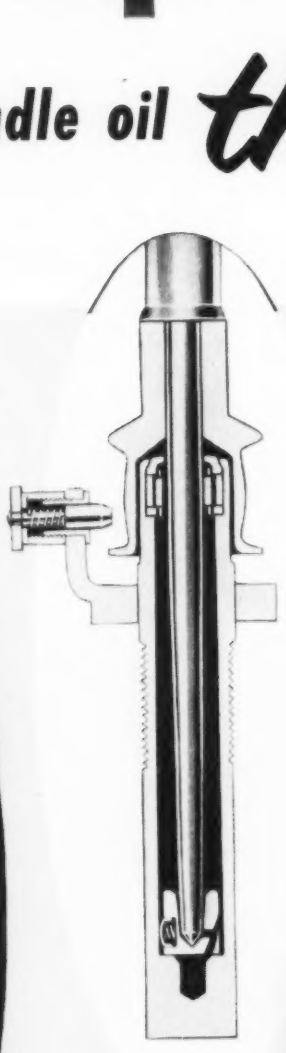
the only spindle oil that



Spindle with sleeve-type bearing. Because it will not thicken in service, Gulfspin keeps power consumption low.

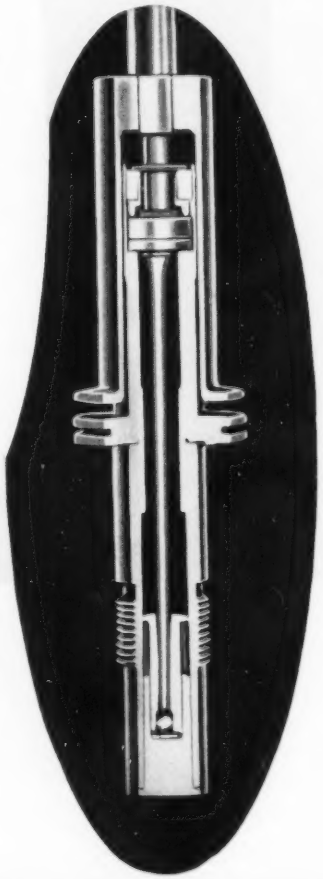
Spindle with roller bearing. Gulfspin prevents rusting and wear, reduces ends down.





Spindle with spring-type vibration dampening device. Absence of sludge with Gulfspin insures proper dampening at all times.

Sealed spindle with roller bearing at top and plain foot-step bearing. Gulfspin's high resistance to oxidation and deterioration makes it ideal for this application.

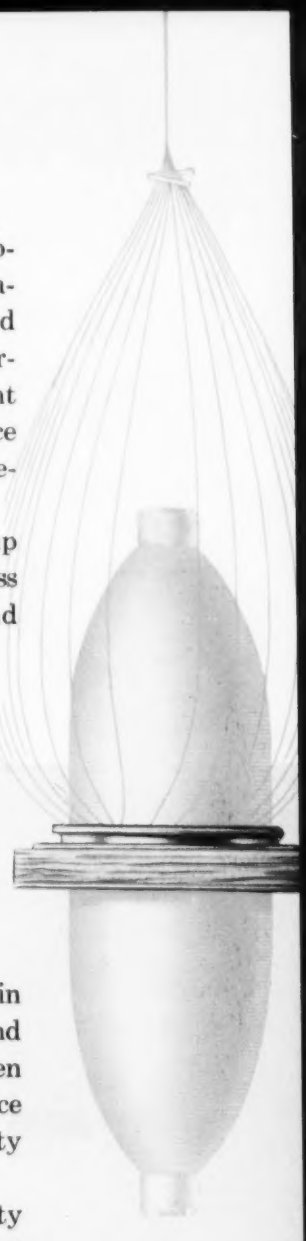


1 Keeps spindles and bolsters clean . . . no deposits of any kind

Gulfspin works three ways to keep spindles absolutely clean. First, it has the inherent ability to resist sludge formation—it's oxidation stabilized. Second, Gulfspin prevents contaminants from depositing on spindle parts. Third, Gulfspin provides effective protection against rust, especially important in cast-iron bolsters where rusting causes bolster wear and discoloration of the lubricant.

Because deposits are not a problem with Gulfspin, spindle vibration is kept to a minimum and dampening devices function normally. Gulfspin also has excellent oiliness characteristics, which reduce the rate of wear and prevent enlargement of spindle clearances.

This kind of performance adds up to smooth spindle operation, less vibration, fewer ends down, and rock-bottom maintenance costs.



2 Prevents increase in power consumption . . . does not thicken in service

When we remember that spinning frames may consume as much as 60% of the total power used by a textile mill, it is evident that appreciable savings in power consumption here are worth while.

For spindle lubrication, equipment manufacturers and lubricant suppliers recommend oils of low viscosity which will have the necessary film-forming properties and dampening effects. But what if this carefully selected viscosity increases appreciably when the oil comes in contact with dirt, lint, water, and oxygen? Ordinary spindle oils often thicken after a few months of service and may show a gain in viscosity of 10 to 20 Saybolt Seconds.

Such an increase in oil viscosity results in a power increase of about 1 watt per spindle, 200 watts per frame, 20,000 watts per 100 frames! Converted to dollars and cents, this might total a substantial sum.

Save on power with Gulfspin!

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company
1934 Gulf Building, Pittsburgh 30, Pa. TW

Please send me, without obligation, a copy of your pamphlet entitled "Gulfspin."

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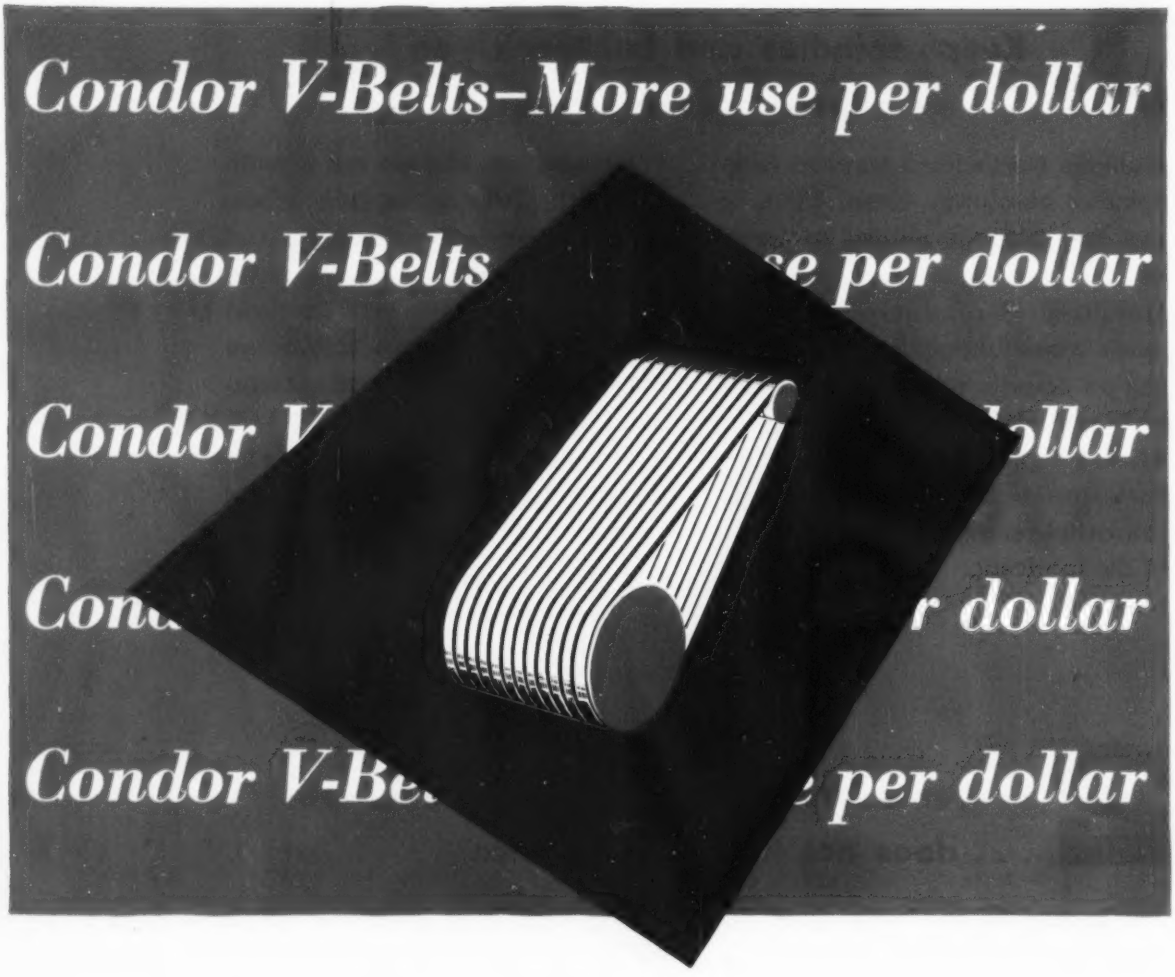
Company .....

Title .....

Address .....



MORE GRIP, LESS SLIP, LONGER LIFE . . . . Yes, you save money with Condor V-Belts on even the toughest multiple belt drive. Straight sidewalls provide more grip, less slip, longer life. They are the smoothest running V-Belts made, because every part is precision-balanced in manufacture. This, too, means longer life. Also in special oil-, heat-, static-resisting types . . . Get the engineering facts. Ask the R/M distributor for Bulletin 6868 . . . He'll tell you, too, how you get MORE USE PER DOLLAR with R/M hose, transmission and conveyor belts.

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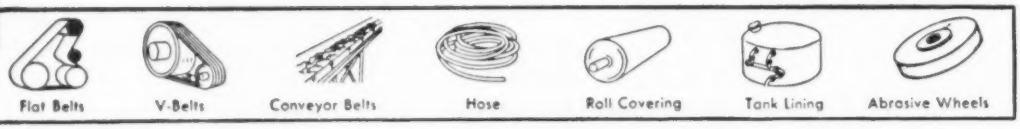
RAYBESTOS-MANHATTAN, INC.



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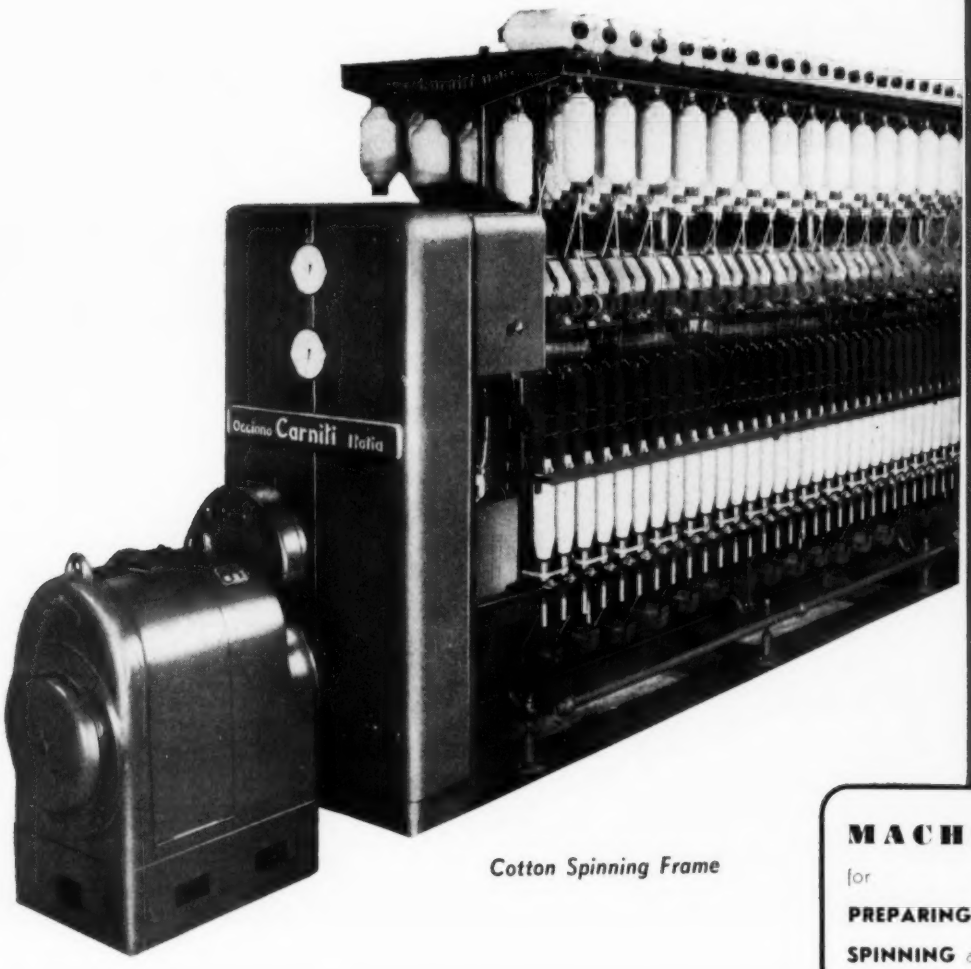
NEW SPINNING AND TWISTING FRAMES

LESS FLOOR SPACE
MORE PRODUCTION
BETTER YARN
LARGE PACKAGE



Cotton Spinning Frame

MACHINES
for
PREPARING
SPINNING and
TWISTING of
COTTON
COMBED WOOL
CARDED WOOL and
COTTON WASTE

Exclusive Representative for our Cotton and Woolen Equipment for U.S.A. and Canada

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AUTOMATION STARTS WITH WESTINGHOUSE MOTORS AND CONTROLS

How to take the sting out of motor and control maintenance headaches

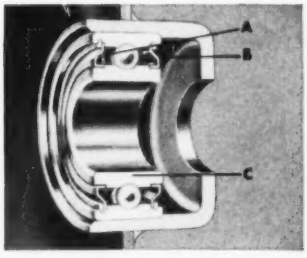
Today's textile plants, with their swing toward automatic operations, often require hundreds of motors and controls to power one battery of equipment. This high degree of mechanization places a great emphasis on problems of maintenance. Lint, moisture, vibration and overloads are but a few factors that threaten motor and control efficiency. They magnify maintenance headaches.

The Westinghouse Lint-Free Motor is specially designed to reduce maintenance problems. Lint is swept through and OUT of the motor by virtue of special air passages that provide double-end ventilation. The motor actually cleans itself. Windings in this lint-free motor are specially formed and coated to effect a smooth surface that will not gather dirt or lint. Motor bearings, PRE-LUBRICATED and SEALED, need no further maintenance. They have the proper type and amount of grease locked in . . . eliminate bearing failures from improper lubrication.

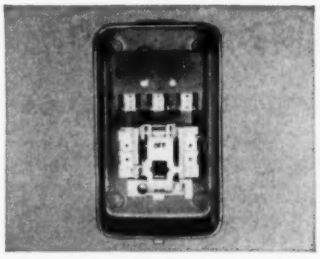
To end control maintenance headaches, Westinghouse designed a lint-tight starter (NEMA Class 1A) that has full Factory Mutual Approval. A Neoprene gasket forms a tight sealing for the starter . . . prevents the entry of lint. The chance of explosion and fire from lint or dust reaching starter contacts is eliminated. Faulty operation and gummed-up mechanism become a thing of the past with this starter—it provides positive protection for motors up to 7½ hp, 550 volts. Other special controls for the textile industry are also available.

Get all the details in booklet *Life-Line* Motors and Controls for the Textile Industry*, B-5422. Ask your Westinghouse representative for a copy or write, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania. J-21758

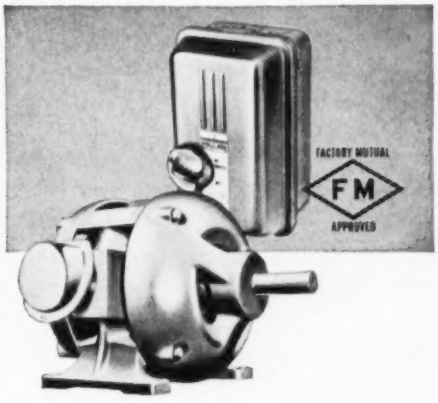
*Trade-Mark



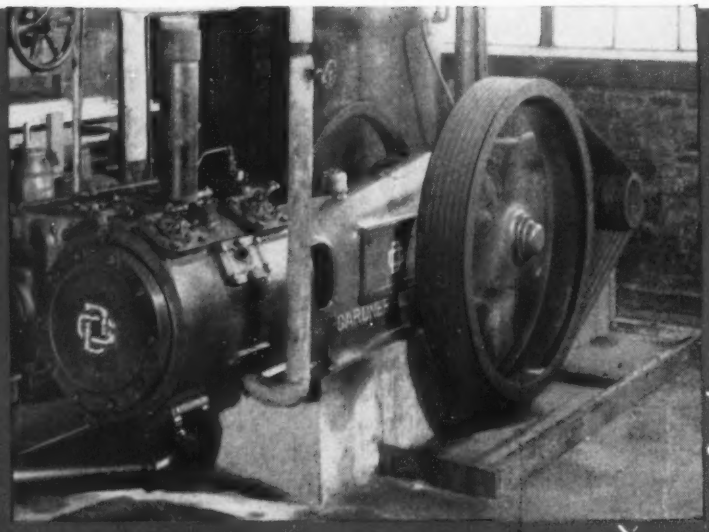
Bearings give trouble-free service
A. Channels packed with proper grease that inhibits oxidation and deterioration.
B. Positive bearing seals prevent grease seepage . . . lock out dust and other foreign material that lessen bearing life.
C. Double-row width bearing gives maximum support to motor shaft.



Safe, easy control maintenance
Lint-tight starter cover can be lifted off for servicing. Complete instruction and heater tables are on inside of cover. A protective shield prevents accidental contact with line terminals. For added protection the starter can be locked in "OFF" position during servicing.

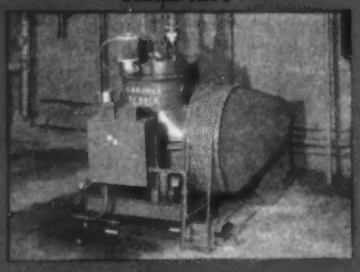


YOU CAN BE SURE...IF IT'S
Westinghouse



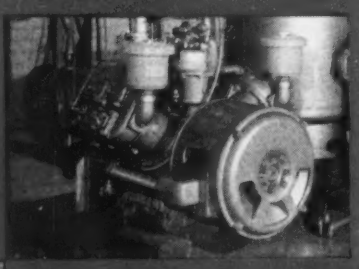
Model RX
65 to 1262 c.f.m. displacement
Bulletin RAC-40

Model AA
32 to 133.6 c.f.m. displacement
Bulletin AA-6

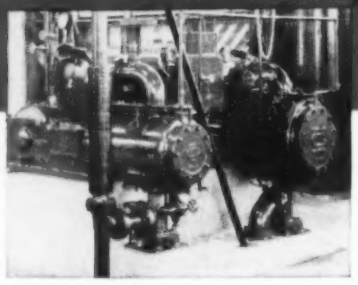


PRESSURE:	Holding up
OUTPUT:	Up to capacity
EFFICIENCY:	Right up there
OPERATION:	Downright economical
MAINTENANCE:	Trifling

For everyday compressor reports like this—
choose GARDNER-DENVER.
Write for descriptive bulletins.



Model WB
142 to 686 c.f.m. displacement
Bulletin WB-10



Model HA
468 to 1854 c.f.m. displacement
Bulletin HAC-36

GARDNER-DENVER SINCE 1859

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For a Wide Range of Finishes That Withstand Repeated Washings . . .

RHONITE R-I

Extraordinary washfastness distinguishes cotton, rayon, and blended fabrics that have been finished with RHONITE R-1 for crush resistance and stabilization of shrinkage.

This is equally true whether the finish is plain, calendered, or embossed.

Whatever the effect, cottons and other textiles treated with RHONITE R-1 can be laundered over and over again and still maintain their mill-fresh beauty, their resistance to wrinkling and shrinkage.

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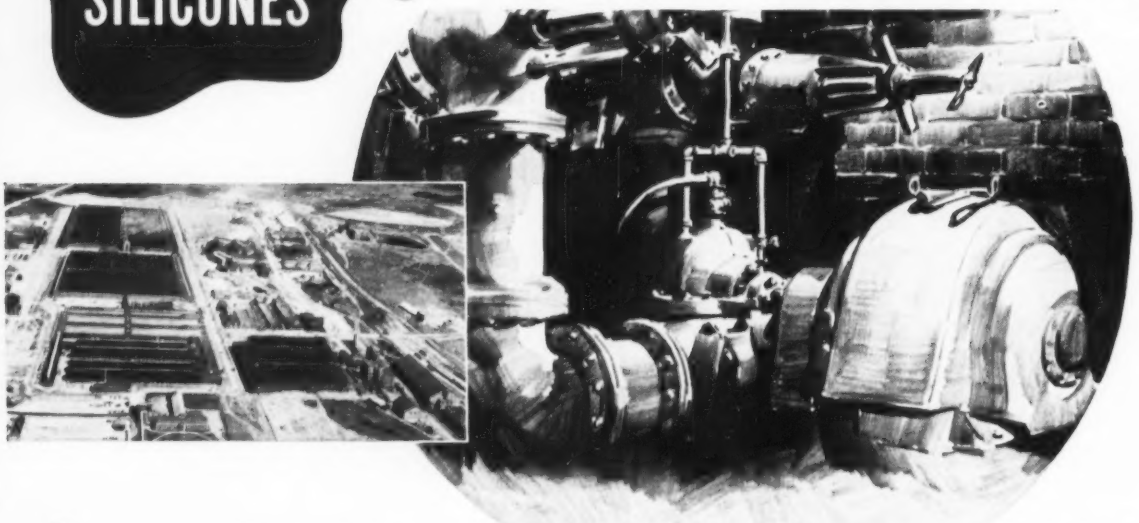
DOW CORNING
SILICONES

give motors more muscles



Seventeen 100 to 250 hp motors uprated by 50%; save over $50,000

Largest aluminum producing plant in the world, the Arvida Works of the Aluminum Company of Canada, Ltd., (Alcan) increased its capacity several times in the past few years to a current high of 2 million pounds of ingot per day. Over a year ago an obstacle to further expansion turned up in the ore plant, where bauxite is mixed with a caustic solution to separate the alumina. Called on to handle larger quantities of caustic solution, the plant was unable to replace their existing pump motors with larger motors. There was simply no room for them.

Alcan maintenance engineers neatly solved that problem by rewinding all 17 of their 100, 125 and 250 hp motors with Class H insulation made with Dow Corning silicones. Total power output was increased by more than 50%. The cost of rewinding with Class H materials was $50,000 less than the list price of the equivalent capacity in new motors. And that doesn't include the far greater expense of installing larger pedestals, changing all the fittings, and rearranging the pump lines to accommodate larger motors. Furthermore, downtime was held to a minimum during the changeover.

Rewound with Class H insulation these motors have carried a 50% overload for over a year in spite of frequent spraying with caustic solution. And that's typical of the performance of Class H motors, regardless of size. They can carry heavy sustained overloads; operate with greater power efficiency where periodic overloads are involved; give 10 or more times the life of Class B motors under comparable service conditions. That's why alert management, maintenance and production men now specify Class H insulation for hard-working motors, generators and transformers.

mail this coupon today

Dow Corning Corporation
Dept. AJ-10, Midland, Michigan
Please send me:

- ☐ Performance Data on Class H machines.
- ☐ List of Class H motor repair shops.
- ☐ Data on Silicone Grease for motor bearings.
- ☐ 24 page booklet entitled "Tall Tales and Fabulous Facts."

Name_____
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You can also reduce or eliminate motor outages due to bearing failure; specify Dow Corning 44 Silicone Grease for motor bearings.

In open and single shielded bearings designed for high temperature operation, Dow Corning 44 has 8 to 10 times the life expectancy of conventional greases. It gives life-time lubrication in permanently sealed bearings.

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Midland Michigan
DOW CORNING SILICONES

ATLANTA • CHICAGO • CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEW YORK • WASHINGTON, D. C. (Silver Spring, Md.)
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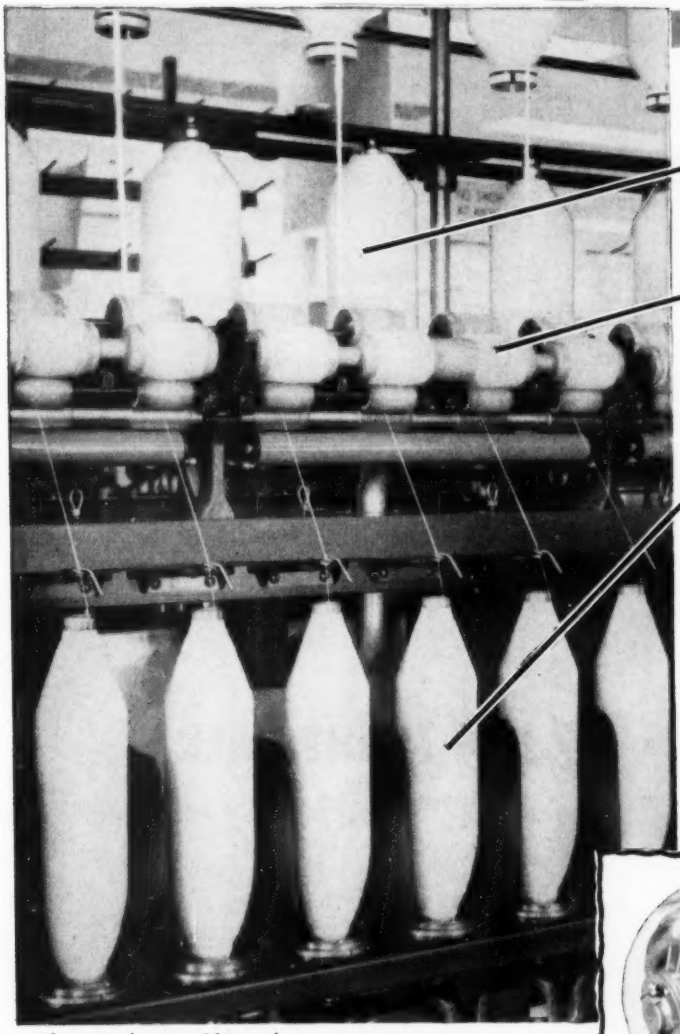
for **FLEXIBILITY**

PERFORMANCE

ECONOMY of OPERATION

. . . it's the Whitin Model "F3" large package Spinning Frame



Close-up showing 11" packages of 10's cotton, using 3" ring.

Creel—easily accessible

Standard height creels are easy for the operator to reach, and provide ample storage space on the top deck for roving supply packages.

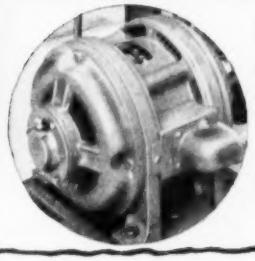
2-apron drafting system

The two apron drafting system, developed, perfected, and used by Whitin for twenty-two years, is recognized as outstanding for fiber control and drafting performance. Highly flexible in range of drafts, it is easy to clean and to operate.

Traverses up to 11"

With traverses up to 11" and packages containing up to 16 oz. on coarse counts, substantial savings in spinning can be made, with equal or superior yarn strength and quality. In addition, sharp reductions in winding costs are effected.

The Whitin F-3 Spinning Frame is designed for spinning large packages at high productive speeds. Its functional design results in minimum expense of installation operation, doffing, creeling, cleaning, lubricating and maintenance. Provision for changing traverse length and ring size has been made to insure its flexibility in meeting present and future mill requirements.



Low power consumption

The standard textile motors used keep installation, power consumption and maintenance costs at a minimum.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

ONLY *Fletcher* OFFERS SUCH A COMPLETE LINE OF EXTRACTORS

Fletcher JUNIOR

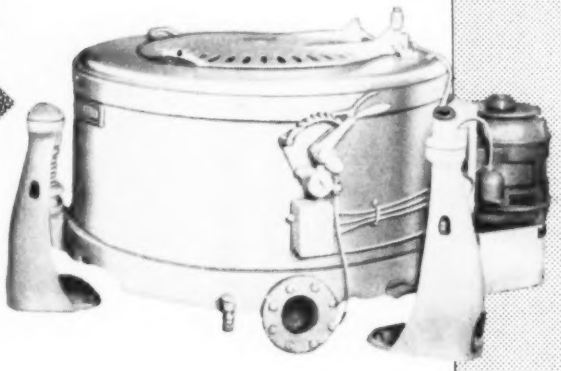
Capacities: 30" 5.5 cu. ft.
33" 8.5 cu. ft.
36" 10.0 cu. ft.

This popular model is designed to fit the needs of the average medium size establishment. Safe for all materials. Minimum floor space. Extremely stable up to ten pounds out of balance.

Fletcher WHIRLWIND

Capacities: 40" 13.3 cu. ft.
48" 21.4 cu. ft.
60" 34.3 cu. ft.

The glass-smooth interiors cannot harm fabrics. Deep stainless steel baskets offer maximum capacity for their diameters. Ruggedly built for high speeds—up to 1,200 R.P.M. Built-in safety features.



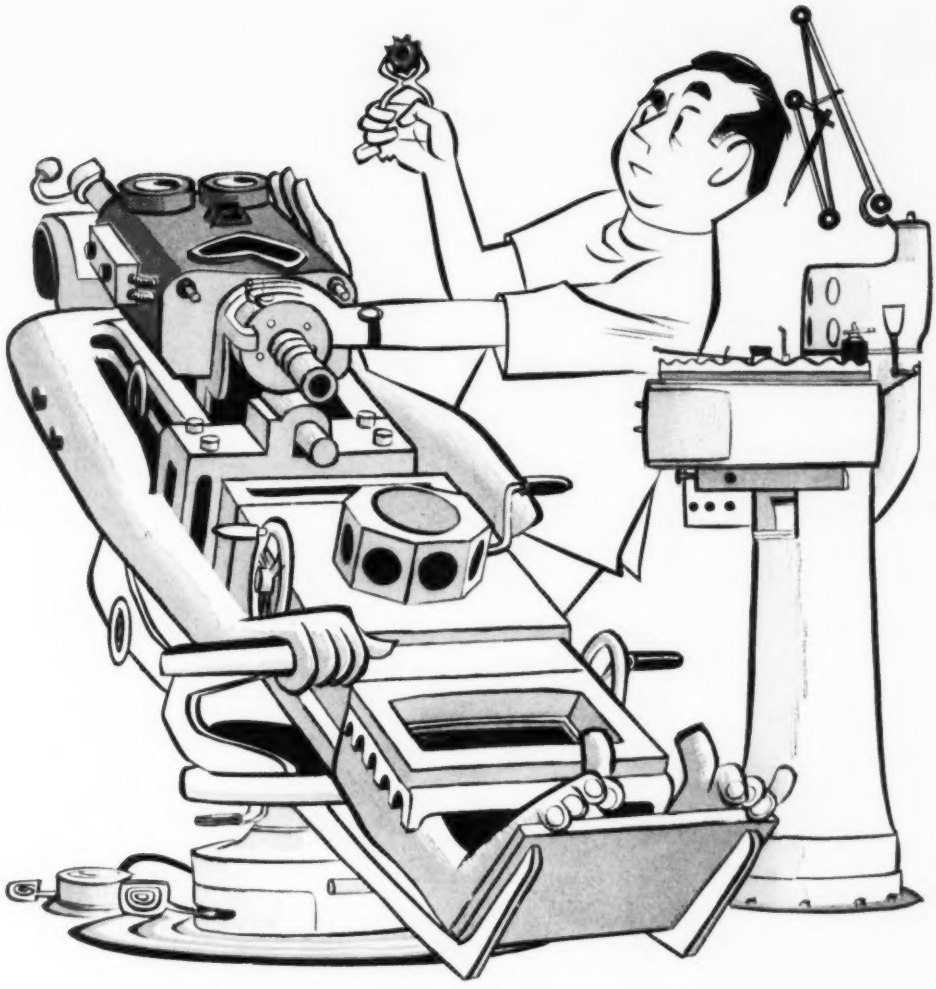
Fletcher TWINTAINER

Capacities: 50" 28.4 cu. ft.
54" 33.7 cu. ft.

Twin container trucks are removable from extractor for loading and unloading automatically through the bottom. One set of baskets may be loaded while another is spinning—cuts time by 67%. Saves labor.

FLETCHER WORKS

223 GLENWOOD AVE. PHILADELPHIA 40, PA. ESTABLISHED-1850



It hurts twice as much today!

Double reason why you need Correct Lubrication!

Look up some of your bills for machine repairs during the last so-called "normal" year. *You'll be surprised!* The ring gear that cost you $83 to replace in 1939 now costs $165. A thrust bearing that cost $44.35 now runs $88.73. A millwright's hourly rate in 1939 was 70¢. Now it is $1.56 per hour.

Yes, it sure hurts twice as much today to pay for machine maintenance—*double* reason why you need a program of Correct Lubrication! Such a program assures your use of the right oil or grease for every part of every machine . . . thus steps up machine efficiency—keeps repairs and downtime to an absolute minimum.

Why not get a program of Correct Lubrication started in *your* plant? Call your Socony-Vacuum representative!

SOCONY-VACUUM OIL COMPANY, INC., and Affiliates:
MAGNOLIA PETROLEUM COMPANY, GENERAL PETROLEUM CORPORATION

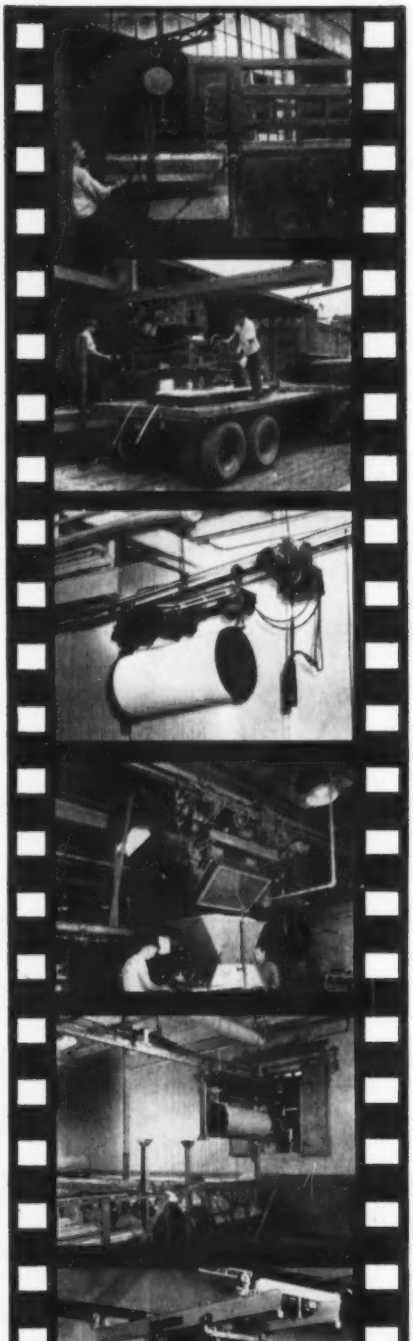
Socony-Vacuum

SOCONY-VACUUM

Correct Lubrication

First step in cutting costs!

 For more information, write direct or use Reader Service post card.



Quickly removes die blocks from trucks

Saves $30 each truck unloaded

Delivers beams to another building

Automatic delivery of core sand

Automatic transfer of slasher beams

Stacker crane increases storage by 60%

a 16 mm movie that discusses handling problems common to every industry

Before you decide upon any material handling equipment, let us loan you "Up and Over". This 16 mm film shows many installations of American MonoRail overhead handling equipment. You will see hand operated to fully automatic systems—one or more that may be particularly adaptable to your operations. The film is educational, interesting, informative and shows the way to economical, safe and time-saving material handling. Your ticket of admission is only a note to us asking for a print. It will help us if you advise the exact date, as close as possible, when you wish to use it.

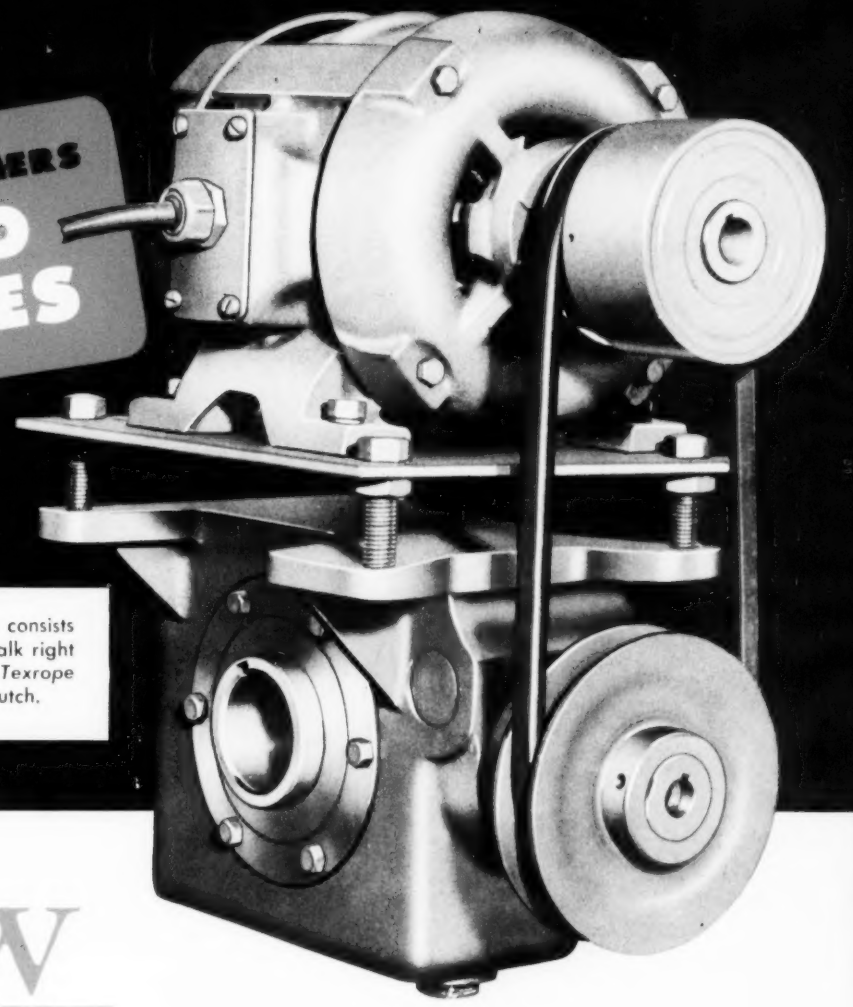
THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE **CLEVELAND 7, OHIO**

For more information, write direct or use Reader Service post card.

ALLIS-CHALMERS

CARD DRIVES



New Allis-Chalmers card drive consists of *Quick-Clean* motor driving Falk right angle gear reducer through *Texrope* V-belt drive and centrifugal clutch.

Now

Have a Neater, Lighter Card Room

IF YOU'RE STILL OPERATING with a jungle of shafts and overhead belt drives for lack of a good, reasonably priced individual card drive, here's the drive for you.

Allis-Chalmers card drive now provides full protection from lint, plus enough power at the shaft for fastest possible card operation. *Quick-Clean* motor and highly efficient gear reducer are combined in this compact, reasonably priced power package.

Easy to Install

There's no need to move cards to install this drive. Unit requires practically same floor space as tight-and-loose pulley drive. It is mounted directly on card shaft with torque arm to keep the gear box from rotating. No strain on card arch to cause vibration or distortion.

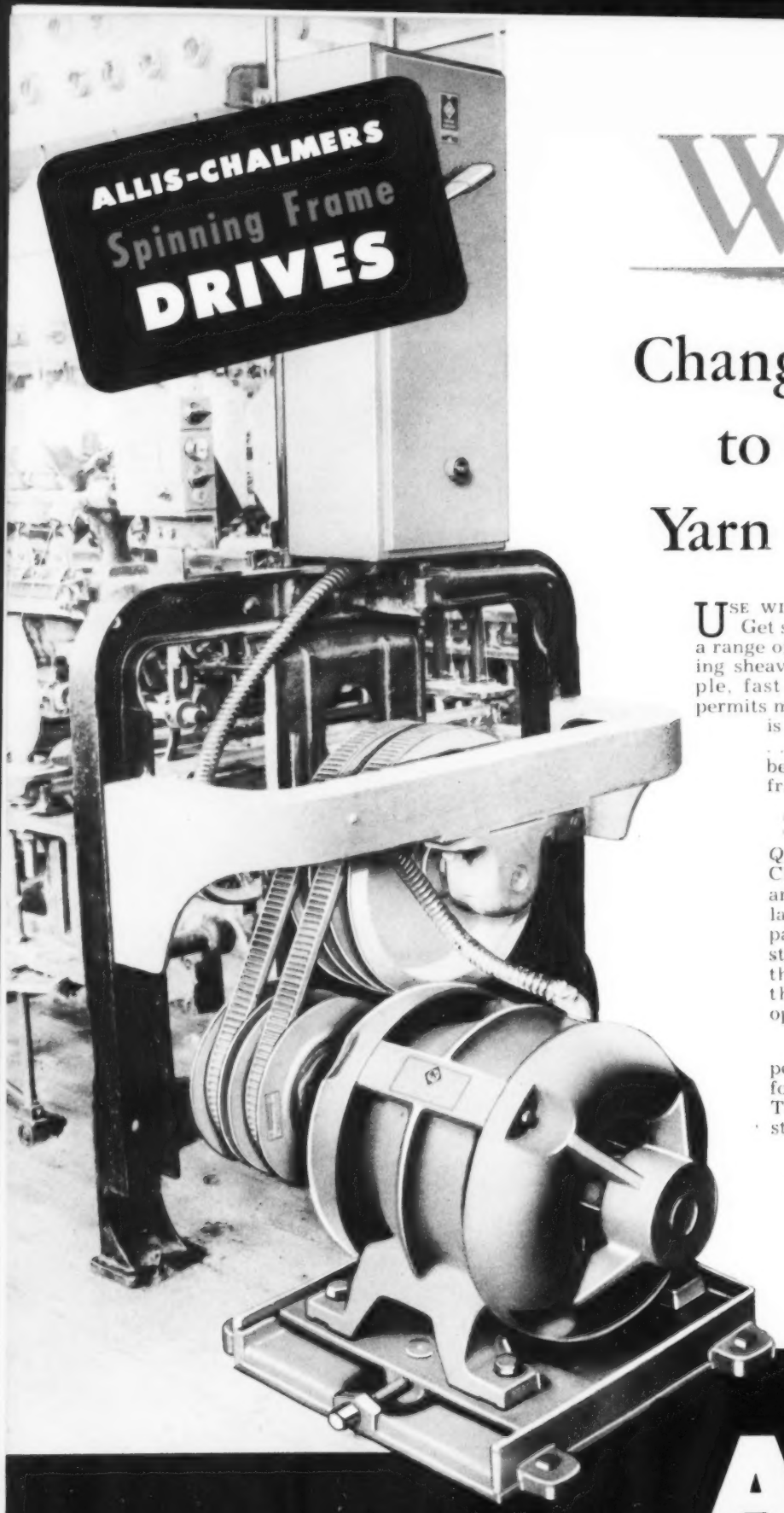
Cuts maintenance, too! No heavy, expensive belts to replace . . . no periodic belt dressing. In addition, drive is practically vibrationless, increasing life of card and making it easier to keep in adjustment. There's also a special, slow speed starter for this drive. Get details from your nearby Allis-Chalmers district office or distributor, or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletin 51 B 7867.

A-4159

Quick-Clean, Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

ALLIS-CHALMERS

A-C ALLIS-CHALMERS



Why

Change Sheaves to Change Yarn Numbers?

USE WIDE RANGE *Vari-Pitch* sheaves. Get stepless speed adjustment over a range of nearly 2 to 1, without changing sheaves. Speed adjustment is simple, fast and accurate. New design permits mounting sheave so adjustment is on motor side . . . out in open . . . instead of in cramped space between sheave and spinning frame.

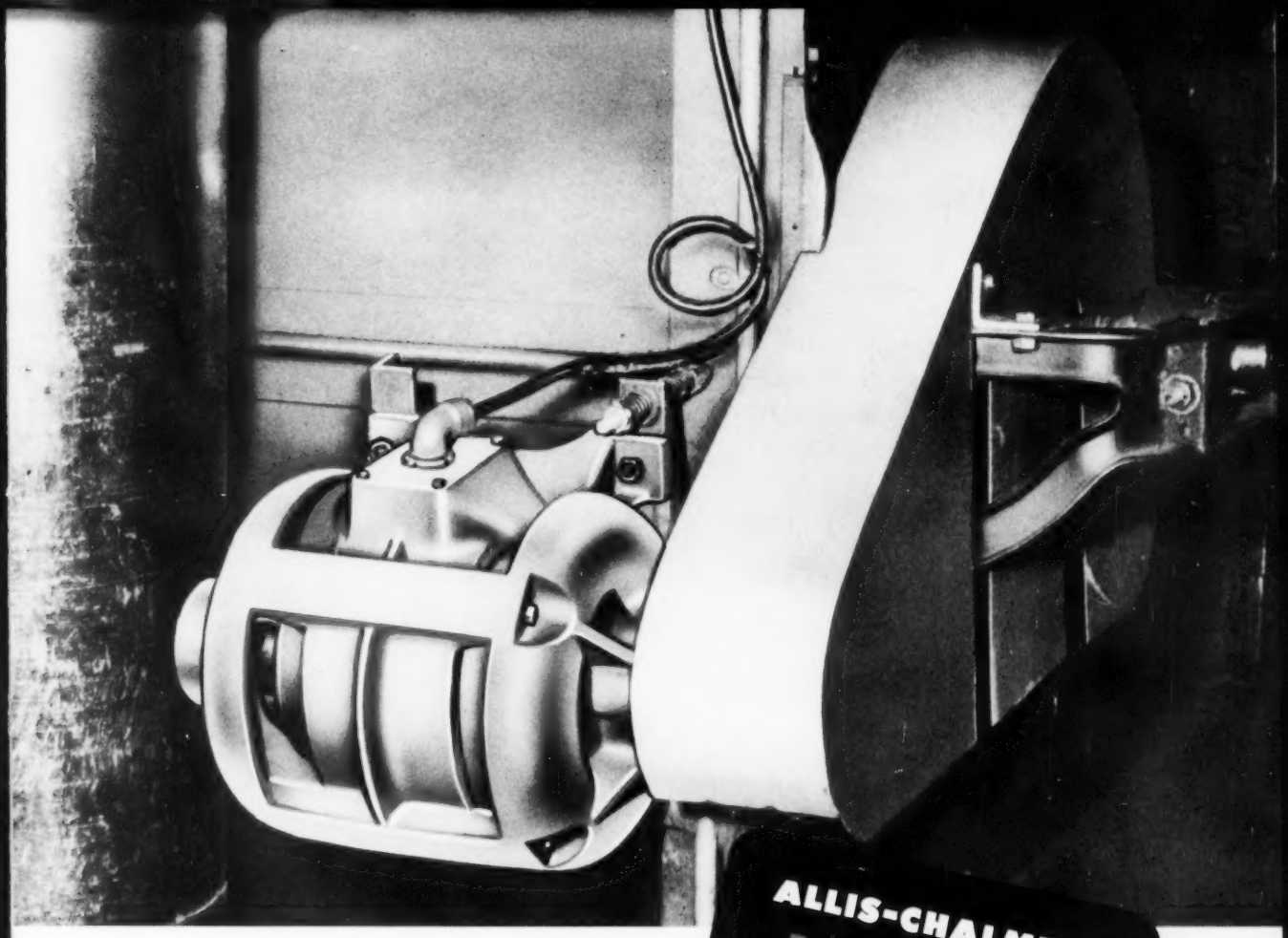
Special Motor Used

Quick-Clean motors for Allis-Chalmers spinning frame drives are designed for humid, lint-laden mill atmosphere. Internal passages are smooth, hard and streamlined. Lint getting into the motor is swept right out through large unobstructed openings by powerful fans.

Allis-Chalmers general purpose starters are recommended for these spinning frame drives. They are compact . . . easy to install and wire.

Ask your nearby A-C representative or distributor for complete information. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-



ALLIS-CHALMERS
Roving Frame
DRIVES

Stop

Rough Roving Frame Starts

SLOW, SMOOTH ACCELERATION, using Allis-Chalmers roving frame motor, reduces ends down, helps produce uniform roving.

This motor takes almost three times as long as a standard motor to reach full speed. Slow, smooth acceleration provides e-v-e-n tension on the roving during starting periods. Special windings permit relatively high torque when required with low torque for smoother acceleration in normal operation.

Quick-Clean frame design allows powerful fans to sweep lint and dirt in and out with the cooling air.

Allis-Chalmers can also supply your other needs, including *Texrope* V-belt drives and special slow speed starters.

Call an Allis-Chalmers distributor or district office. Or, write Allis-Chalmers, Milwaukee 1, Wis.

-CHALMERS

A-C ALLIS-CHALMERS

Here's

ALLIS-CHALMERS "Certified" SERVICE

Specialized Service to Back These Drives

Allis-Chalmers distributors and district offices are equipped to provide the application help you need. In addition, the distributors listed below operate "Certified Service" shops. Here factory-approved methods and parts are used to assure like-new service from your motors, transformers and control.

Allis-Chalmers District Offices and Certified Service Shops in Textile Areas

Allis-Chalmers textile specialists are located in the following cities:

Atlanta, Georgia
Birmingham, Alabama
Boston, Massachusetts
Charlotte, North Carolina
Chattanooga, Tennessee
Dallas, Texas
New Orleans, Louisiana
Providence, Rhode Island
Richmond, Virginia

Certified Service Shops

ALABAMA
Birmingham
Electrical Repair & Service Co.
2411 First Ave., South
Montgomery
Standard Electric Co.
505 N. Decatur St.

CONNECTICUT
Hartford
Charles H. Leppert
100 Walnut Street
Waterbury
Electric Motor Repair Co., Inc.
2101 S. Main Street

GEORGIA
Albany
Georgia Electric Co.
927 Roosevelt Ave.
Atlanta
Bearden-Thompson Electric Co.
1085 Bankhead Ave., N.W.
Columbus
Smith-Gray Electric Company
710 Third Ave.

LOUISIANA
New Orleans
Industrial Electric, Inc.
3227 Magazine Street
Shreveport
Shreveport Armature & Electric Works, 800 Spring St.

MAINE
Brewer
Stanley J. Leen Company
54 Wilson Street

MASSACHUSETTS
Lawrence
Roland B. Glines Co.
265 Lowell Street
Springfield
Electric Motor Repair Co.
11 Park Street

NEW HAMPSHIRE
Concord
A. S. Tracy
28 Green Street

NORTH CAROLINA
Charlotte
Southern Electric Service Co., Inc., 714 W. Trade Street
Greensboro
Southern Electric Service Co., Inc.
Rocky Mount
Hammond Electric Company
824 S. Church Street

SOUTH CAROLINA
Greenville
Southern Electric Service Company, Inc.
Spartanburg
Southern Electric Service Company, Inc.

TENNESSEE
Columbia
Middle Tennessee Armature Works, 113 Andrews St.
LaFollette
Standard Armature Works
LaFollette, Tenn.
Memphis
Industrial Electric & Supply Co., Inc., 62 Auction Ave.

TEXAS
Amarillo
G. E. Jones Electric Company Inc., 212 N. Polk Street
Dallas
Industrial Electric Equipment Co., 1119 S. Industrial Blvd.
Houston
Roy A. Berentz Co.
1400 Carr St.

VIRGINIA
Richmond
Wingfield & Hundley
13 South 17th Street
Roanoke
Virginia Armature Company
310 W. Salem Avenue

ALLIS-CHALMERS

Get More Information

Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin

Please send me literature checked below.

- ☐ Handy Guide to Motor Selection 51B6052
- ☐ *Quick-Clean* Textile Motors 51B6055B
- ☐ Across-the-Line Starters 14B7132
- ☐ Reduced-voltage Starters 14B7215
- ☐ Wide Range Stationary Control Sheaves 20S7590
- ☐ *Vari-Pitch* Drive Engineering Data 20B7499

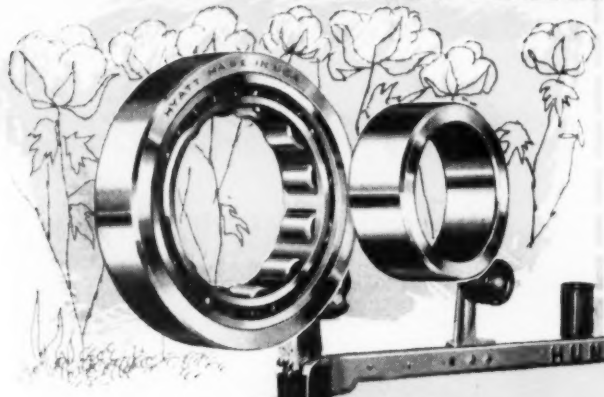
Name ..... Title ..... Company .....

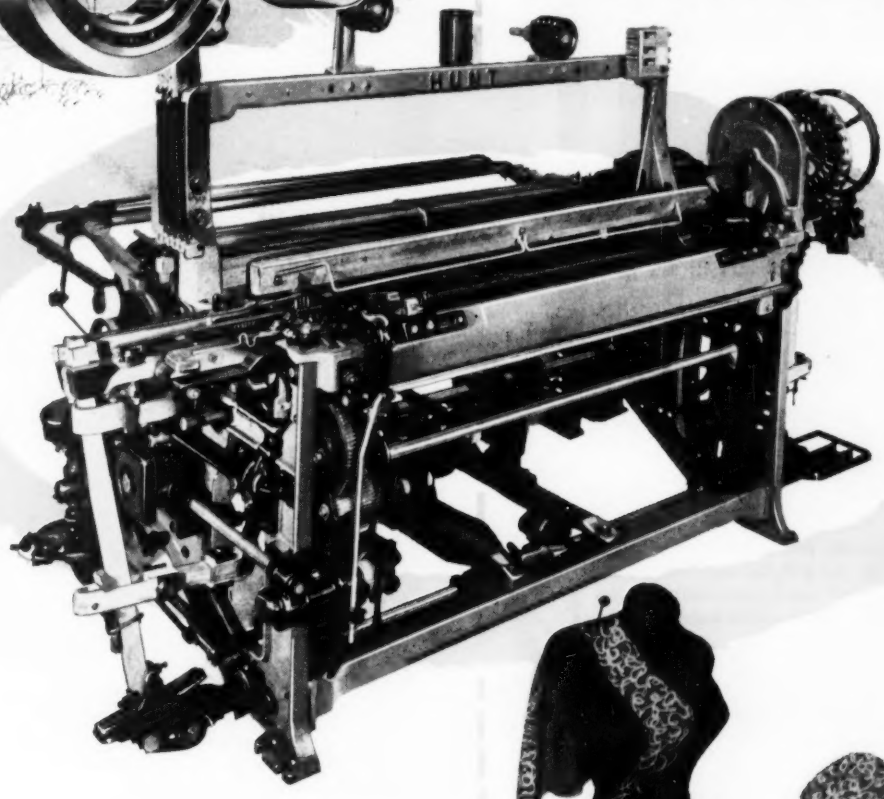
Street ..... City and State .....

A-4159

Another Great Feature of the HUNT H-B-3 . . .

HYATT ROLLER BEARINGS!





Mill operators who examine the specifications of the new Hunt Cotton Loom will know at a glance that it's built for top performance! *Because they'll see that it's built with Hyatt Roller Bearings!* Hyatts are on the camshaft, crankshaft, pickshaft, whip roll, yarn beam and at other vital positions.

Hyatt Bearings permit the H-B-3 to operate at higher speeds with a minimum of friction and lower power costs; and because the bearing housings effectively retain lubricants during long periods of continuous operation, lubrication costs are also reduced. Positive shaft alignment, the result of Hyatt's precision fit, cuts bearing wear and reduces down time. And as every mill owner knows, sealed, grease-lubricated, Hyatt-equipped bearing housings mean *cleaner* yarn and cloth with a reduction in seconds.

Whether you're buying new equipment or making changeovers, insist on Hyatt Bearings. It's one sure way to cut operating costs and protect your machine investment. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

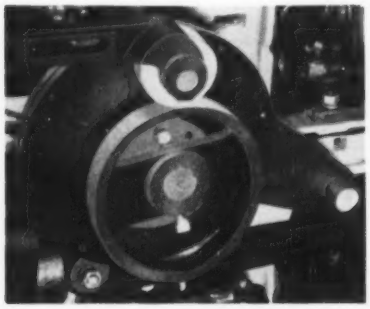
 For more information, write direct or use Reader Service post card.

Announcing **THE NEW HUNT**

Completely

ELECTRIC BRAKE

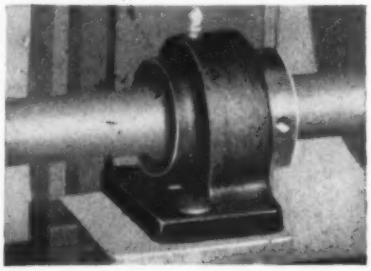
Electric Brake is coordinated with electric drive to stop loom within 1/400 of a second at any desired position. No adjustment or maintenance required.



This new HB-3 Loom at Borden Mills, Kingsport, Tennessee, has been operating with an automatic stop and start attachment and a counter for 256,740 stops and starts (equivalent to 50 years operation) with no adjustments and no detectable wear.

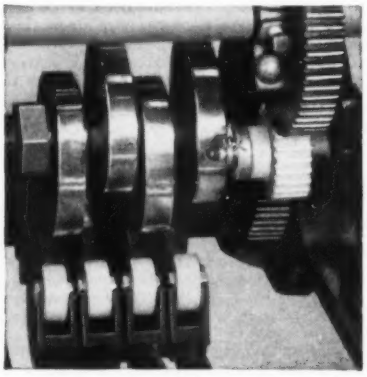
ANTI-FRICTION BEARINGS

Anti-friction bearings are used throughout the main shafting of the HB-3. The bearings are sealed in and need only occasional greasing. Results are no grease on cloth, reduces friction in driving the loom, no wear at bearings or main shafts and ease to the weaver in moving the lay.



OILLESS BUSHINGS AND NYLON GEARS

Oil impregnated bushings throughout and nylon gears against metal gears eliminate all surface oiling and consequently eliminate throwing oil on cloth. These bushings and nylon gears and rolls, because of less wear, reduce parts replacement of the entire loom by 70%.



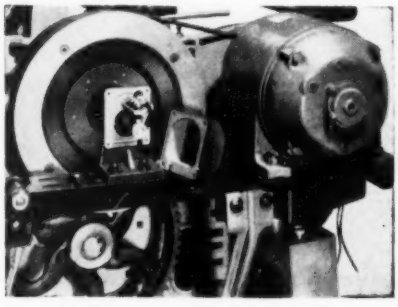
HB-3 LOOM

Automatic!

Stops and starts precisely • No oiling
70% less replacement parts

ELECTRIC DRIVE

With push button control the weaver restarts the loom by simply pressing a button. Electric contact prevents thrust on drive and eliminates wear.



This is the new HB-3 Loom now successfully operating at Borden Mills, Kingsport, Tennessee. A new Warner Electric clutch and brake starts and stops the loom automatically. When a warp end breaks or on a manual stop, the loom stops within 1/400 of a second with the harness level. The weaver restarts the loom by simply pressing the push button. The automatic stop and start attachment eliminates wear on the drive and brake parts.

Anti-friction bearings need only occasional greasing —eliminate grease on cloth and reduce friction in driving the loom. Oil impregnated bushings and nylon gears eliminate oiling and reduce parts replacement by 70%. Nylon gears against metal gears also eliminate wear and lubrication.

The Borden Humidity-Irregularity Minimizer draws the proper humidity through the warp and all lint through the drop wires—keeping the loom and weave room as clean as your own home.

Write, wire or telephone Hunt today for more details on the new HB-3 Loom.

HUNT

LOOM & MACHINE WORKS, INC.

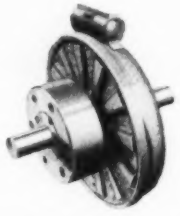
200 ACADEMY ST. **GREENVILLE, S. C.**

 For more information, write direct or use Reader Service post card.

How Warner Electric Motion Control contributes to fully automatic operation of

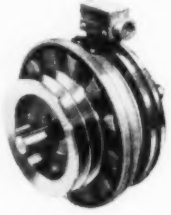
NEW HUNT HB-3 COTTON LOOM

Modern automaticity reaches another milestone in the textile industry with the advent of this remarkable new Hunt Cotton Loom. The loom *starts* (via pushbutton) with the speed of lightning. It *stops* automatically . . . within 1/400 of a second. No notches to engage, no clearances to take up, no solenoids or complicated linkages to slow operation. You increase productivity, decrease maintenance time and costs, provide foolproof control over machine motions, reduce spoilage. Your equipment can be similarly automaticized with Warner Electric Motion Control. For the complete story, contact your nearby Warner representative, or send coupon today.



Warner Electric Brakes are available with static torque ratings from 8 in. lbs. to 700 lbs. ft. Low wattage. Precise adjustment of speed and power. No wear adjustments. Rapid heat dissipation. Compact. Light in weight

Warner Electric Clutches are also available with static torque ratings from 8 in. lbs. to 700 lbs. ft. Even largest sizes require only 25-35 watts of direct current. Precise control of acceleration and power. Automatic wear take-up. Rapid heat dissipation. Easily adaptable.



Warner Electric Brakes and Clutches provide 5 important new features for users of Hunt Cotton Looms

1 *Accurate, prepositioned stops*—if warp end is down, loom stops automatically with the harness level. If a filling breaks, loom stops with shed wide open. Manual pushbutton stop causes loom to stop with the harness level. Result—a lightened work load on the weaver, shorter shut-down time.

2 *Reduced maintenance*—cushioned starts and stops assure long life for all loom components. Acceleration tests indicate life expectancy in excess of 50 years for the Warner Clutch and Brake. Amazingly simple—they never need adjustment.

3 *Fewer mechanical parts* required for starting and stopping motions. Less chances for trouble, lower repair costs, smaller inventory of spare parts add up to more production at higher profit.

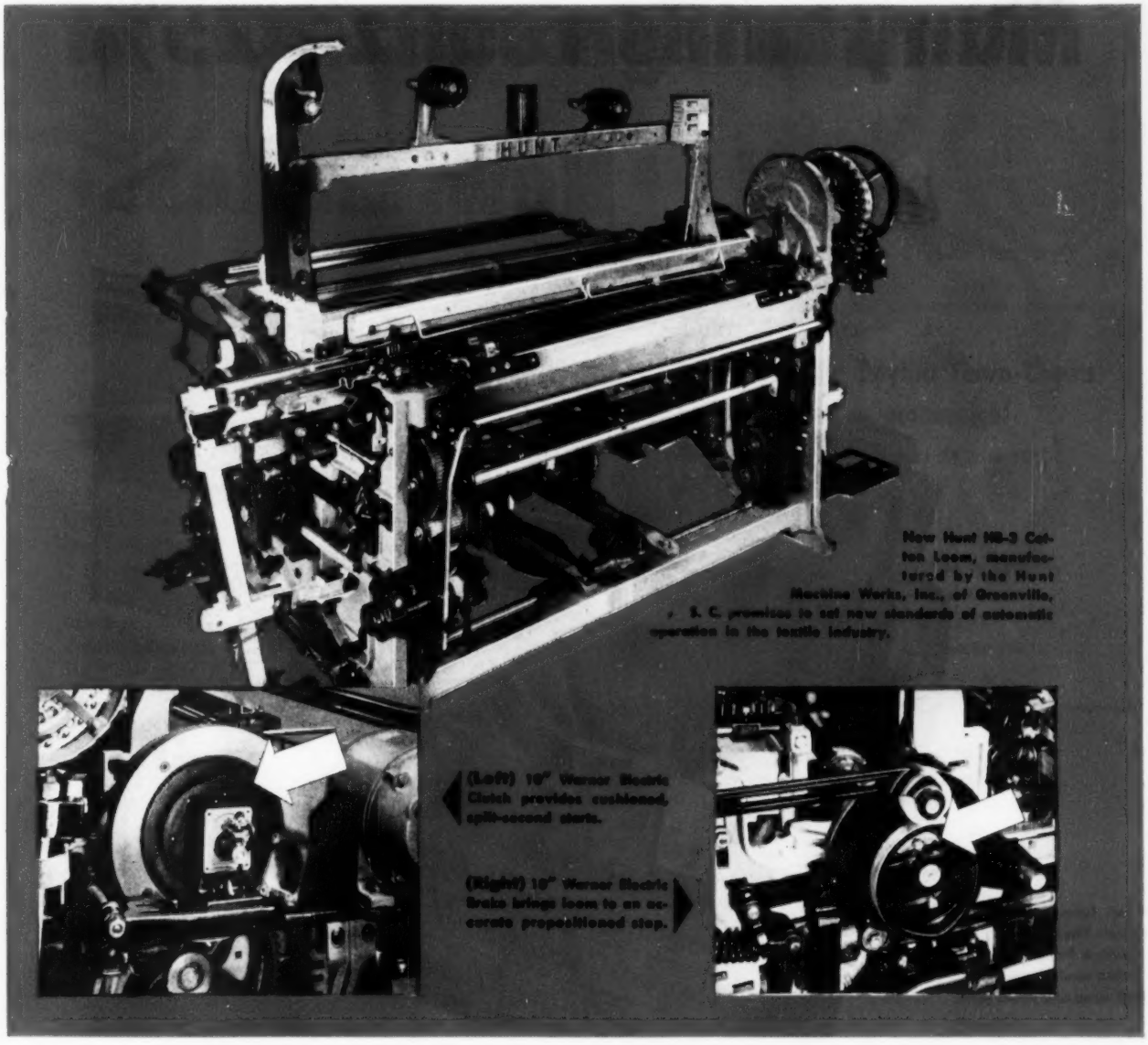
4 *"Inching" the loom* smoothly with pushbutton control is a simple matter, saving the manual labor of turning the handwheel.

5 *Electric signals* to counters help management determine stoppages due to warp preparation and quality, or filling quality.

WARNER

ELECTRIC BRAKES & CLUTCHES

FOR INDUSTRIAL APPLICATIONS



New Hunt HB-3 Cotton Loom, manufactured by the Hunt Machine Works, Inc., of Greenville, S. C. promises to set new standards of automatic operation in the textile industry.

(Left) 10" Warner Electric Clutch provides cushioned, split-second starts.

(Right) 10" Warner Electric Brake brings loom to an accurate prepositioned stop.

Warner Electric Brakes, Clutches and Clutch-Brakes give you new, unique simplicity of design and operation. There are only two main parts, an armature and magnet. Operation is by *electro-magnetic*, instantaneous engagement and release of friction surfaces. Torque ratings are extremely high for their small size and light weight. No coasting or slipping when "locked in." Easily designed into original equipment. Readily adapted to automatic cycles and remote control by limit switches, relays, electric eyes, pushbuttons, etc. Rate of application is accurately controlled to synchronize motions—give exact degree of speed and power required for your machine operation.

CONTROL ENGINEERING SERVICE . . . Warner offers complete application and control engineering service and field assistance. If you have a clutching, braking, tensioning, indexing, or speed-control problem, consult competent, experienced Warner brake and clutch specialists for reliable recommendations on torque, heat, electrical controls, capacity, etc.

NEW CATALOG: 20 pages of facts, case histories, and specifications of Warner Electric Clutches and Clutch-Couplings. Pass coupon to letterhead or post card, and mail today.

Warner Electric Brake & Clutch Co., Dept. TW, Beloit, Wis.

☐ Please send your FREE Booklet, WEB 6089.

☐ Would like to see working demonstration.

Firm Name_____

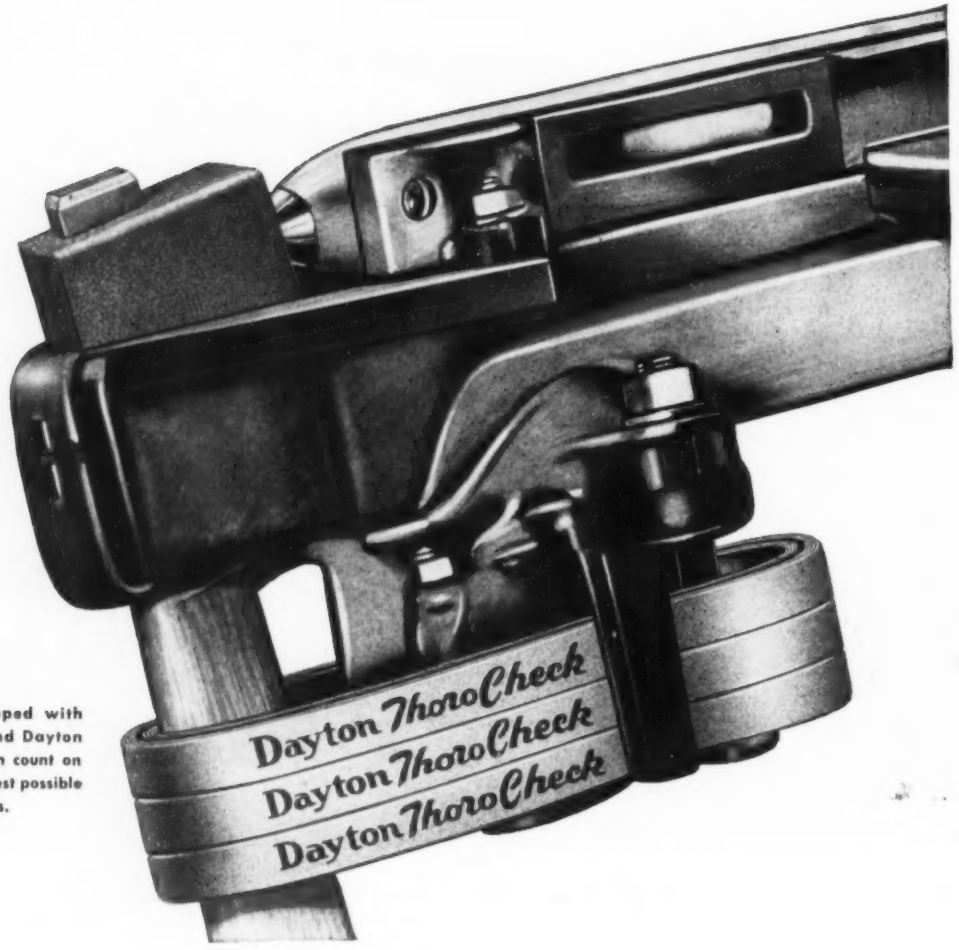
Individual_____ Title_____

Address_____

City_____ State_____

Many mills realize 25%

New Endless



When looms are equipped with Dayton Thoro-Checks and Dayton Thorobred Pickers, you can count on efficient service at the lowest possible check strap and picker costs.

Alert, cost-conscious textile mills everywhere are adopting Dayton Thoro-Checks as standard equipment on their looms. Such action follows the results of many test installations, proving the amazing ability of Dayton Thoro-Checks to reduce check strap costs.

Actual installations show that this Dayton endless check strap outlasts other types by 25 to 50%, and in some instances, even more. For example, a large southern mill installed them on X-2 looms. Since then they have seen 5-day week, round the clock operation for over 10 months. And they're still in service. Old type straps lasted only two or three months on these very same looms. But that's not all . . . besides longer check strap life, the mill also realized considerable saving in maintenance labor since almost no adjustment of the straps was necessary.

There are definite reasons for such outstanding performance. Smoother checking by means of a snubbing action stops the stick with less impact on each individual strap, thus lengthening strap life. Also, an endless strap eliminates the drag over the stick of open end types—another step toward longer strap life.

You enjoy important maintenance savings, too, when you equip with Dayton Thoro-Checks. Once the straps are properly installed, there is almost complete freedom from adjustment, even on Monday morning starts. That's because the rubberized fabric construction is unaffected by temperature or humidity and doesn't "grow," even under the terrific pounding of high-speed looms.

to 50% Savings with Check Straps

There's an important safety factor with Daytons, too, both from the standpoint of damage and from lost production. In the event of breakage after long service, generally only one strap will break at a time, thus providing a safety factor not possible with one-piece straps. They may be replaced individually or in multiples.

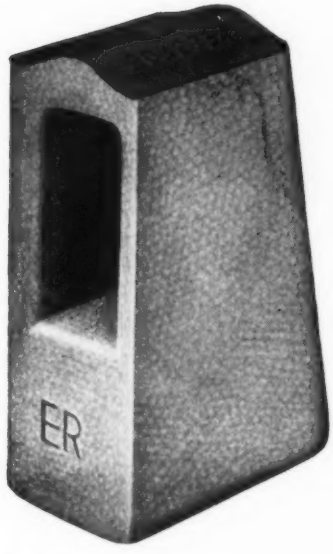
If your looms are not yet equipped with Dayton Thoro-Checks, it will pay you to try them. We believe you, too, will find that they pay for themselves many times over.

Dayton Thoro-Checks are made in a wide variety of sizes to fit practically all makes of looms. Get complete details, or better yet, order your Thoro-Checks today from your Dayton Textile Jobber or write: Dayton Rubber Co., Woodside Building, Greenville, S. C.

Here's why Dayton Thoro-Checks are so economical

- Outlast other straps by 25% to 50%
- Smooth checking
- Little or no adjustment
- No elongation
- Unaffected by temperature or humidity
- Individual or multiple replacement
- Protect binder and picker stick
- Give greater picker and shuttle life

Save on Picker Costs, too, with Dayton Thorobred Loop Pickers



Dayton Thorobred Pickers are built strong to take the pounding of high-speed shuttles for long periods. In fact, they often last twice as long as ordinary pickers.

Because of the slight tilt with which the picker has been designed to fit the stick, there is always perfect shuttle contact. As a result, Dayton Thorobred Pickers keep their shape, stay put on the stick, and practically eliminate jerked-in fillings. Also, Dayton's front edges are rounded to eliminate hanging filling, while its narrow back permits free non-wear on the lay-in strap.

These are only a few reasons why so many mills prefer Dayton Thorobred Pickers. For complete details get in touch immediately with your mill supply jobber or write direct to Dayton Rubber.

Dayton Rubber

Since 1905

TEXTILE PRODUCTS FOR BETTER SPINNING AND WEAVING

Dayton Rubber Company, Textile Division
Woodside Bldg., Greenville, S. C.

© D. R. 1953

 For more information, write direct or use Reader Service post card.

a page from

AMERICAN & EFIRD

USTER

USTER Universal Evenness Tester

means more even yarn for American & Efird customers.

Electronically testing for uniformity of yarn size by the running inch.

Quality Control

. . . the "Watchful Eye"—the guiding hand—of a Family who is proud of its Character of Quality: who cherishes its reputation of Versatility and Service. In order to maintain its high standard of quality and to keep abreast of improved machinery and techniques, American & Efird maintains a Quality Control Laboratory, Industrial Engineering and Standards Department, with the best of equipment and expert personnel. Rigid inspection, constant laboratory research and testing, combine with years of production "know-how" to assure "Quality Control".

Testing for fiber uniformity.

Fibrograph

selects best cotton for American & Efird customers.

USTER CORPORATION

CHARLOTTE 8, NORTH CAROLINA

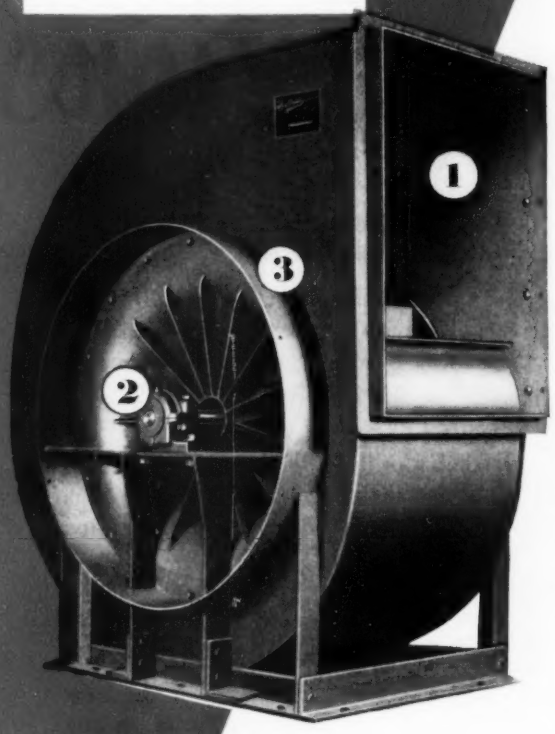
Sales Offices: Atlanta • Needham Hts., Mass.

NEW!

"Buffalo" TYPE "BL" Limit-Load REG. U.S. PAT. OFF. Ventilating Fan

COMPLETE FAN

1. Streamlined housing with outlet designed for most efficient air delivery.
2. Anti-friction or sleeve bearings to suit job requirements.
3. Ample inlet collar for easy connection to ductwork.



In our seventy-six years of fan manufacturing, no fan has been more respected for fine performance than the "Buffalo" Type "LL" Ventilating Fan. This fine performance is now further improved in the new "Buffalo" Type "BL" Limit-Load Fan — designed especially for general ventilation, air conditioning and industrial service.

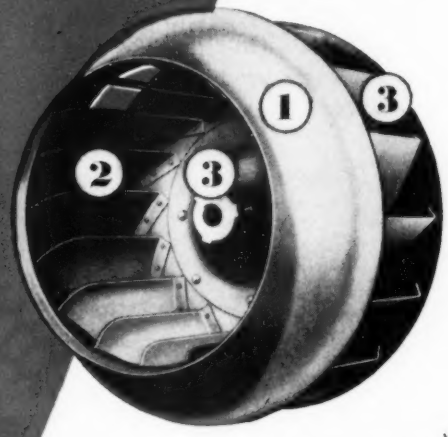
This new fan offers: (1) High efficiency; (2) Minimum noise level, over wide capacity range; (3) Full Limit-Load horsepower characteristic; (4) Stable performance from shut-off to free delivery.

Retaining the husky construction which has characterized "Buffalo" fans for many years, the new Type "BL" has some outstanding quality design features.

The Type "BL" fan will be built in standard sizes and arrangements with rotor diameters from 12¼" to 108¾", to handle from 1,000 to 500,000 cfm.

You will want this superbly-performing new fan with the "Q" Factor* on your next job! Write for new Bulletin F-100, which contains complete engineering details, including performance tables and dimensions.

** The "Q" Factor — The built-in Quality which provides trouble-free satisfaction and long life.*



BUFFALO FORGE COMPANY

404 MORTIMER STREET BUFFALO, NEW YORK

Publishers of "Fan Engineering" Handbook

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

WHEEL

1. Heavy gauge die-formed shroud full curvature for proper air flow in wheel.
2. Die-formed blades curved and backwardly inclined for stable air flow. Welded and riveted for maximum strength.
3. Solid back plate with extra heavy hub.

CERTIFIED RATINGS

Certified ratings are the result of tests made by the Manufacturer in accordance with the Standard Test Code for Centrifugal, Axial, and Propeller Fans adopted by the National Association of Fan Manufacturers and the American Society of Heating and Ventilating Engineers.

AUTHORIZED BY N A F M

INLET

1. Furnished as standard, and exclusive with "Buffalo", these stationary inlet vanes reduce turbulence and assure rated air delivery in spite of unfavorable inlet conditions.
2. Die-formed inlet bell matches wheel shroud.

This extra production

The steady hum of the new "Reading 100" as it knits 100 courses per minute can mean extra profits for you.

It's the fastest multiple-section full-fashioned knitting machine ever built. On 60 and 66-gauge constructions, the new "Reading 100" is operating 25 per cent faster than equipment now in use.

Narrowing speeds of 75 courses per minute are achieved consistently, largely because of the use of end control for the narrowing operation.

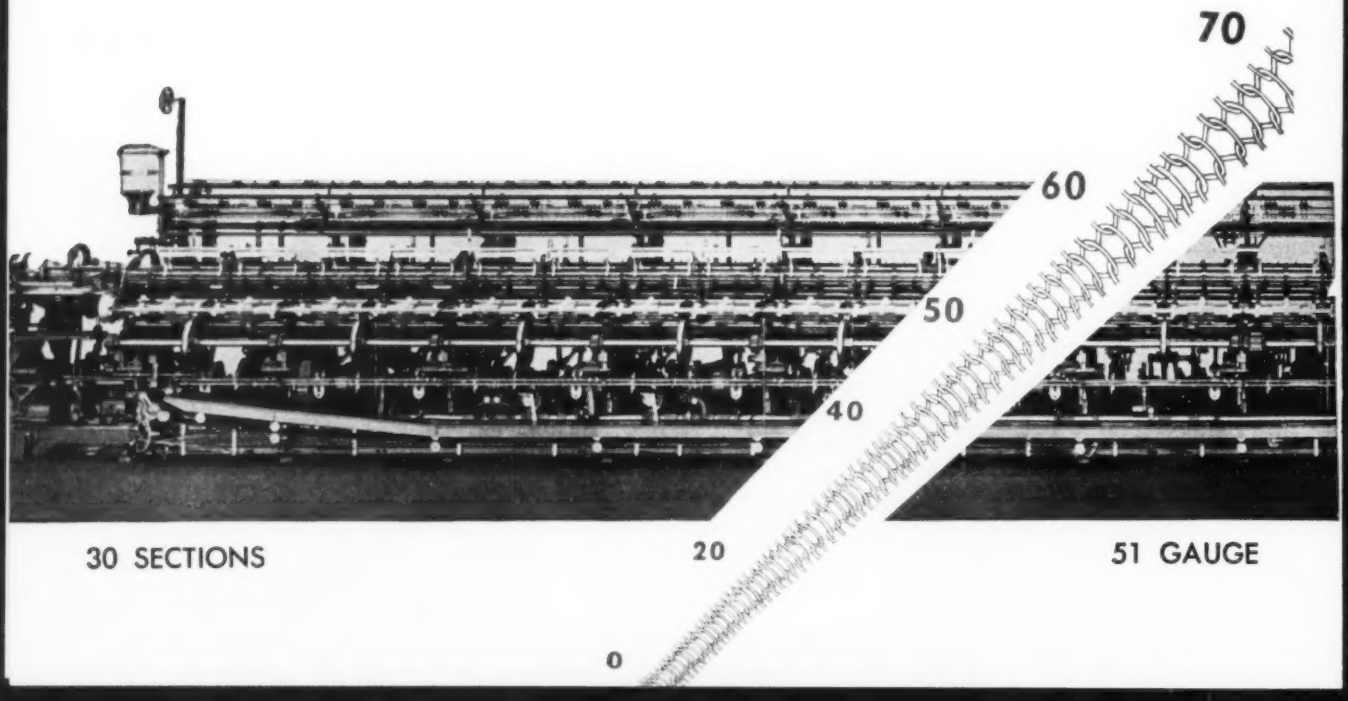
For many years the Reading Full-Fashioned Knitting Machine has been first choice with leading mills around the world. But, leadership imposes responsibilities — in research, in engineering.

Engineers at Textile Machine Works have met this challenge with painstaking research and development. Many of the improvements that are familiar throughout the full-fashioned hosiery industry today were developed and pioneered in our shops.

The new "Reading 100" is the result of ten years of design and development . . . ten years of working to amazingly close tolerances to achieve precise, high-speed knitting performance.

All cam motions are newly designed to permit operation at 100 courses per minute. With the exception of needle bar cams and balancing cams, all cam settings are made with a single gauge, assuring synchronous operation and greatly reducing time required for making or checking settings.

Check your production against the new "Reading 100." Compare results on any basis — courses per minute, dozens per shift, quality of the knitting. Only the "Reading 100" offers you extra production of fine quality full-fashioned stockings. Let us give you full details.



can be yours

100

95

90

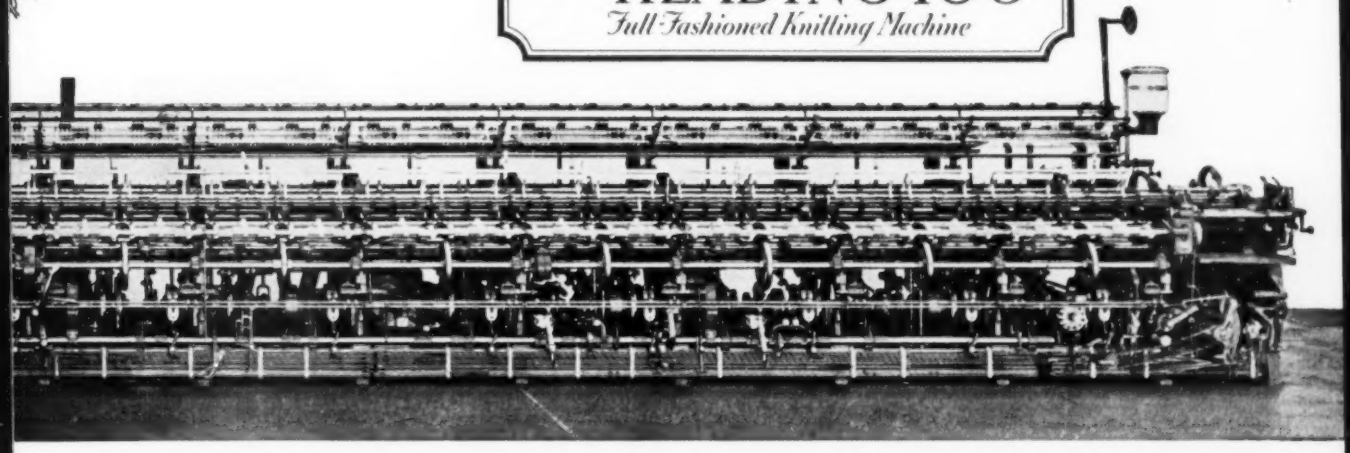
85

80

75

100 courses per minute

The "READING 100"
Full-Fashioned Knitting Machine



60 GAUGE

66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U. S. A.

NEW!

ALL-PURPOSE VENTILATING SETS YOU CAN PUT INTO SERVICE FAST!

Direct-connected or V-belt drive
200 cfm to 15,000 cfm

Here's a new line of Westinghouse motor-driven ventilating sets. They are ideal for general purpose ventilation, for exhaust, for processes, and for removal of heat, fumes and vapor.

Where changing plant or building conditions create an unexpected need for ventilation, these sets are a quick solution. Here's why:

COMPACT SIZES—down to 10" x 12" x 16"—take little space, are easy to install.

SINGLE UNIT—fan, motor and drive all made and assembled by Westinghouse.

DIRECTION OF DISCHARGE—can be changed on the job.

LOW MAINTENANCE permits use of out-of-the-way locations.

WEATHERPROOF COVERS permit outside installation.

SHORT DELIVERIES get your job started sooner.

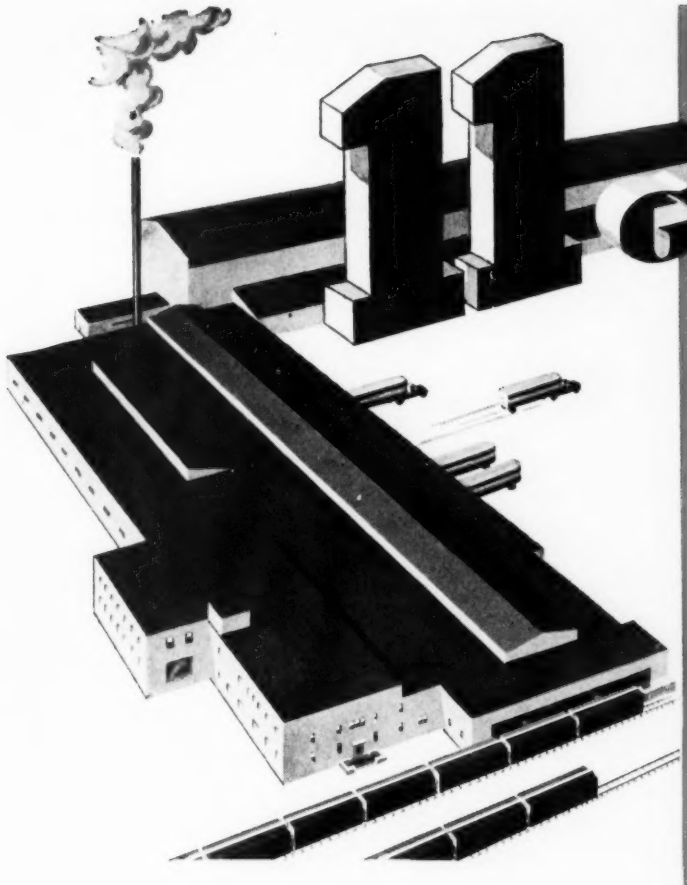
These ventilating sets are low in first cost, low in operating cost. You get a single warranty because fan and motor are both built by Westinghouse.

For other exclusive features and full information, ask for Catalog 1160. Call your local Westinghouse-Sturtevant office. Or, write Westinghouse Electric Corporation, Sturtevant Division, Hyde Park 36, Massachusetts.

WESTINGHOUSE AIR HANDLING

J-80317

YOU CAN BE SURE ... IF IT'S Westinghouse



11 GAIR PLANTS

specialize in

SHIPPING CONTAINERS

BOGOTA, N. J.

CAMBRIDGE, MASS.

CLEVELAND, OHIO

HOLYOKE, MASS.

MARTINSVILLE, VA.

NO. TONAWANDA, N. Y.

PHILADELPHIA, PA.

PORTLAND, CONN.

RICHMOND, VA.

SYRACUSE, N. Y.

TETERBORO, N. J.

Offer Neighborhood Service

You get fast, assured delivery when you order containers from one of these plants. Whether your order is for 100 . . . 100,000 . . . or more. Here's why: Of the many Gair plants, these 11 are set up *exclusively* for shipping container production. Each one has the men, machines, and material needed for your job—backed up by Gair's 89-year record of customer satisfaction. Check the listing to see which plant is in your neighborhood. Call on that plant for your corrugated or solid fibre shipping containers; you'll get the material you want when you want it.

Do you have your copy of the Container Handbook? If not, write to Department 14.

EST. 1864

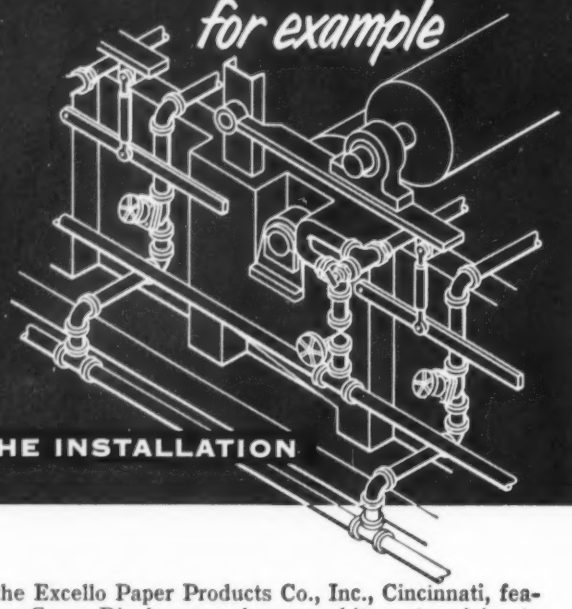
GAIR

SHIPPING CONTAINERS
FOLDING CARTONS
PAPERBOARD

ROBERT GAIR COMPANY, INC. • 155 EAST 44TH STREET • NEW YORK 17

How This Valve Keeps Doing What Others Couldn't ... on White Water Service

for example



THE INSTALLATION

At the Excello Paper Products Co., Inc., Cincinnati, featuring Crane Diaphragm valves on white water piping to cylinder tanks on paper machines.

VALVE SERVICE RATINGS

SUITABILITY:	"Made to Order" for tough jobs
FEATURES:	Seats tight where others fail
MAINTENANCE COST:	None - needs no attention
SERVICE LIFE:	Many times longer than effected
OPERATING RESULTS:	Machine room efficiency improved
AVAILABILITY:	Crane Catalog item - No. 1610

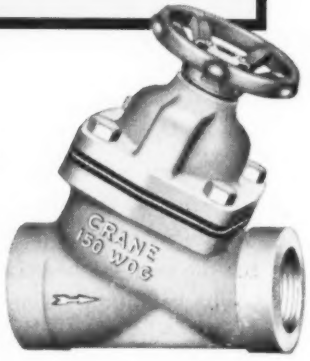
THE CASE HISTORY

Just previously, the plant had resorted to filling white water tanks manually with hose lines . . . so annoying and costly had been the trouble with valves formerly used in this service. Many had been tried, but none could handle the solids and fibers that built up in the bonnets and seats between tank fillings. Almost immediately, the valves became inoperable and leaked at the seat.

Keeping up with valve maintenance, the messy floors, and the safety hazard of white water leakage was an endless task. That's when the plant turned to the hose technique. But not for long, because Crane Diaphragm valves remedied the trouble. They were installed about 6 months ago. Machine room efficiency was improved. The white water leakage hazard to workers was stopped. Plant appearance was improved. And the Crane valves keep doing these things without a penny's maintenance cost to date.

THE VALVE

Crane Diaphragm valves are packless; they eliminate the annoyance and expense of stuffing box leakage. Bonnet and working parts are sealed to fluid; solids or sedimentary accumulation can't interfere. A pliable disc insert absorbs and seats tight on particles that cause leakage in other valves. Independent disc and diaphragm construction saves wear on diaphragm, and even should it fail, valve can be seated. Choose these valves from a wide selection of body and trim materials for corrosive, abrasive, and ordinary services. See your Crane Catalog or Crane Representative.



THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

VALVES · FITTINGS · PIPE · PLUMBING · HEATING

For more information, write direct or use Reader Service post card.

Foster Model 102 Winder for winding cotton, mercerized woolen, worsted, merino, spun silk and spun rayon yarns

PARTNERS in PROGRESS

The high-speed, versatile, Foster Model 102 Winder outproduces older models by two to three times and at a third less labor per pound of yarn. Its increased capacity and efficiency are results of several ingenious refinements plus the liberal use of Fafnir Ball Bearings... another example of design progress in textile machines.

Rollshafts, camshafts, and the head end of the Foster 102 Winder are equipped with Fafnir Sealed and Shielded Ball Bearings resulting in quick start-up and smoother, more uniform, more dependable operation... with substantial reduction in maintenance. The rollshaft and camshaft installations required a new method of fastening the bearings to the shafts and a simple quick method of relubrication... developed jointly by Foster and Fafnir engineers.

For over 25 years, Fafnir has been a Foster supplier... providing ball bearings for original equipment and replacement. This long association is a result of more than just good bearings. Of equal importance is the Fafnir "attitude and aptitude"... a way of looking at bearing problems from the designer's viewpoint and an ability to supply the precise bearings to fit the need. Maybe this combination can help you. The Fafnir Bearing Company, New Britain, Conn.

Fafnir Ball Bearing "Economy" Packages

Sealed & Shielded Radial Type Bearings

. . . with various arrangements of seals and shields.

Power Transmission Units

. . . featuring the Fafnir Wide Inner Ring Bearing with Self-Locking Collar

Special Textile Units

for practically every textile machinery application.

FAFNIR
BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

For more information, write direct or use Reader Service post card.

Sinclair Textile Lubricants Save You Money and Wear...

"No-Drip" stops yarn spoilage!

This fine oil *stays in place*. Won't creep or drip — protects yarn and roll coverings from spoilage. Apply Sinclair NO-DRIP to necks and yokes. It permits rolls to turn smoothly without drag. This provides even draft and saves wear.

"Lily-White" cuts bolster wear!

A superior oil that goes beyond saving bolster replacements. By reducing wear, Sinclair LILY WHITE Oil helps cut spindle wobble, thus reducing power demand and thread breakage and permitting use of a larger package.

These are just two of the Sinclair Textile Lubricants which are important assets in any mill. For lubrication counsel, contact your local Sinclair Representative or write Sinclair Refining Company, 600 Fifth Ave., New York 20, N. Y.

SINCLAIR TEXTILE LUBRICANTS

You ought to try them!

For more information, write direct or use Reader Service post card.

NEW COLORS!

for *bright* shades on jerseys of ORLON and wool

A new, w-i-d-e color range is at your command for jersey dresses and sportswear of "Orlon" and wool blends. And the same wide range brings new versatility to woven goods, too.

To get these bright shades in a range of colors from light to dark, Du Pont technical service experts combined their knowledge of newly developed dyes and their experience with similar fiber blends. They worked with the manufacturer right at his mill to develop successful procedures for dyeing this jersey of 80% "Orlon" and 20% wool.

You can take advantage of Du Pont's unique experience as both a producer of dyes and a creator of man-made fibers. Keep in touch with Du Pont for latest developments, and for help on your problems in dyeing any wool and synthetic fiber blend. Write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

ORLON is Du Pont's trade-mark for its acrylic fiber

Du Pont Dyes

DU PONT

REG. U.S. PAT. OFF.

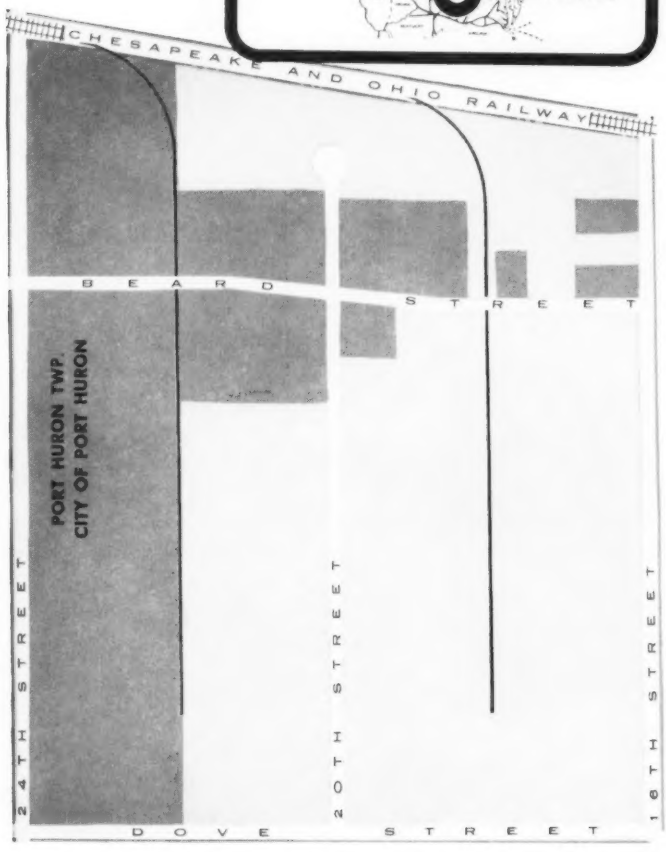
BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

INDUSTRIAL CENTER OF OPPORTUNITY

You'll have good neighbors in the

PORT HURON

MODEL INDUSTRIAL DISTRICT



The light areas indicate the properties available

There are many advantages in becoming part of a carefully planned development such as the Model Industrial District now being organized at Port Huron, Michigan. Port Huron is a good location, too. Excellent transportation by rail, water, or highway. Close to Detroit, Pontiac, Flint and Saginaw.

Labor is no problem because it is an ideal place to live; a friendly city with all kinds of recreation at hand.

The Model Industrial District includes 185 acres which will be divided into sites 600 feet deep and as wide as desired. Several other properties are also available in the Port Huron area. All are on the railway and range from 6 to 152 acres.

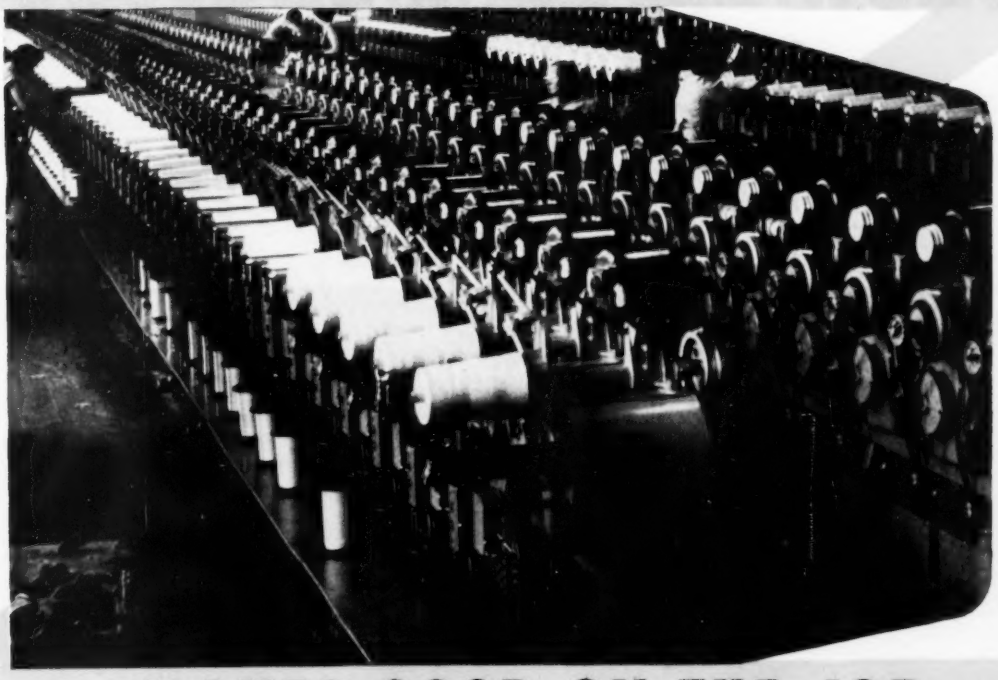
For a Pin-Point Survey giving full information on Port Huron or other industrial sites, write to either the Chesapeake and Ohio Railway, Industrial Development Department, Cleveland 1, Ohio, Detroit, Michigan, or Huntington, West Virginia or address your inquiry to the Industrial Development Corporation of the Port Huron-Marysville area, 1109 Military St., Port Huron, Michigan.

CHESAPEAKE and OHIO RAILWAY

SERVING

VIRGINIA · WEST VIRGINIA · KENTUCKY · OHIO
INDIANA · MICHIGAN · SOUTHERN ONTARIO

FOSTER MODEL 78 PRECISION WINDER



. . . MAKES GOOD ON THE JOB

THE FOSTER MODEL 78 was designed for heavy duty work and is shown here winding rayon tire cord in a well known southern mill. This installation of 575 spindles is eminently successful, living up to all the claims made for it.

The features which contribute to its success are as follows :

1. Produces 10″ traverse cones or tubes weighing up to 51 lbs.
2. Individually motor driven spindles with push-button electronic slow start and spindle brake.
3. Electric stop motion, with calibrated scale, assures accurate and uniform package size.
4. Has no clutches or idler pulleys. Long drive belts are eliminated.
5. Spindles are ball bearing mounted.
6. Easily positioned single weight adjusts pressure and pressure release mechanism.

To meet YOUR requirements this machine may be equipped to wind traverses from 6″ to 10″ and diameters up to 16″ and to draw overend from bobbins, or from swifts, reels or unrolling devices; also with positive, gear driven gainer attachment or belt gainer which is easily adjusted for various yarn sizes.

Bulletin A-98A tells more • Write for it • No obligations

Model 78 cone compared with a standard 6″ traverse cone

FOSTER MACHINE COMPANY

WESTFIELD, MASS., U.S.A.

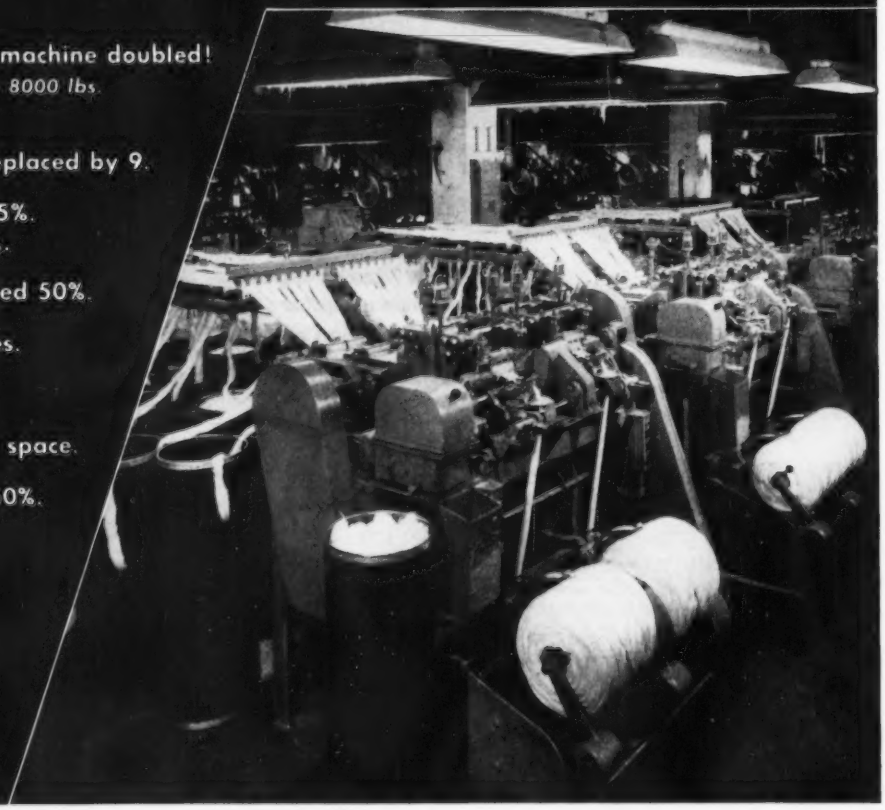
Southern Office: Johnston Building, Charlotte, N. C. • *Canadian Representative:* Ross Whitehead and Co. Ltd., 1475 Mountain Street, Montreal, Que. • *European Representative:* Muschamp Taylor, Ltd., Ashton-Under-Lyne, England.

How Warner & Swasey Pin of worsted yarns at

IN COMB ROOM

18 SINGLE MECHE BALLING HEAD PIN DRAFTERS replaced
24 Gill Boxes (2 operations of intersecting gill boxes)

- Production per machine doubled!
  From 4000 lbs. to 8000 lbs. per 40 hours.
- 12 operators replaced by 9.
- Waste cut by 75%.
  Now less than 1%.
- Quality improved 50%.
- Larger packages.
- Less handling.
- Increased floor space.
- Fixer cost cut 50%.



SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass. 6910 Market St., Philadelphia, Pa.
Candler Building, Atlanta, Ga. 1820 Browning Ave., Charlotte, N. C.

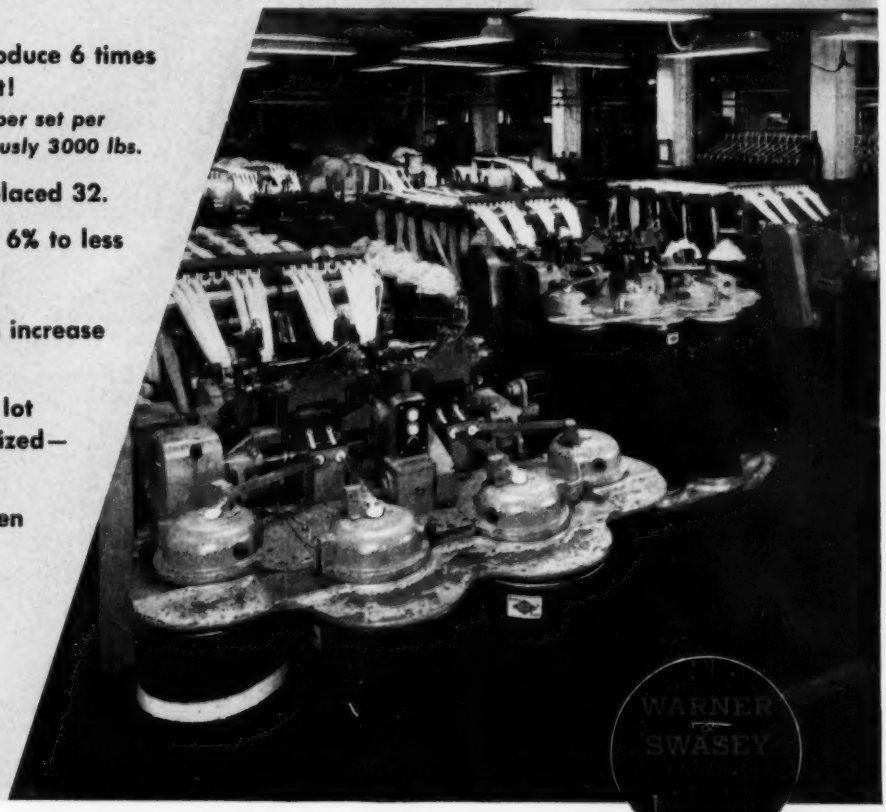
YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY

Drafters boosted production Cleveland Worsted Mills

IN DRAWING ROOM

16 DUAL AND 12 QUAD DELIVERY PIN DRAFTERS replaced 55 machines—11 each: Can Gill Boxes, 2-Spindle Gill Boxes, 4-Spindle Weigh Boxes, 8-Spindle Draw Boxes, Finishers.

- **Pin Drafters produce 6 times as much per set!** *Now 18,080 lbs. per set per 40 hours — previously 3000 lbs.*
- **8 operators replaced 32.**
- **Waste cut from 6% to less than $\frac{1}{2}$%.**
- **40% production increase at reducer.**
- **Changeover at lot changes minimized—fewer piecings.**
- **Fuller, more even yarn.**



WARNER SWASEY

TEXTILE MACHINERY DIVISION

MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

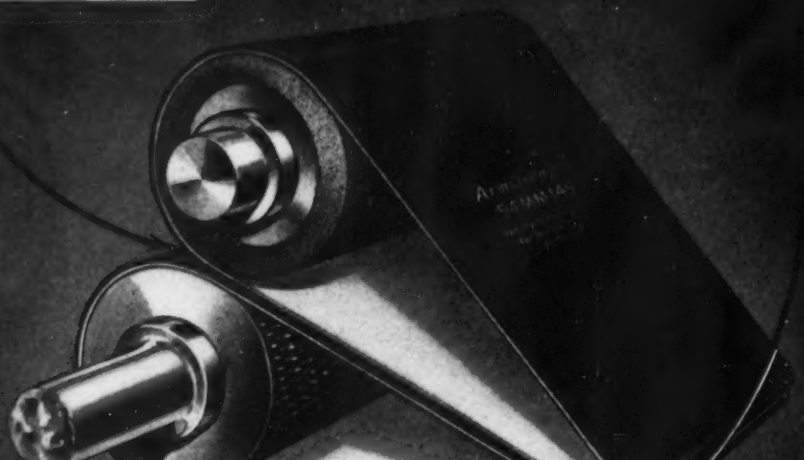
This NO-7075 apron

NO SLIPPAGE HERE

Black outer face has the right friction to keep the top apron moving smoothly. This prevents yarn irregularities which occur when aprons slip at points of contact.

RUNS CLEANER HERE

White inner face won't attract loose fibers, doesn't tend to build up excessive waste inside the apron.



RUNS SMOOTHER HERE

Carefully regulated surface friction of inner face allows smooth, sure transfer of power from driving roll to apron, yet prevents jamming or buckling at nose bar.

ARMSTRONG'S ACCOTEX

runs cleaner and smoother, eliminates top apron slippage

Armstrong's newest Accotex® Apron has inner and outer surface engineered for top performance on new long-draft frames

This black and white Armstrong apron is designed to help you get the most out of the new long-draft equipment with close-pin cradles. The NO-7075 Accotex Apron combines cleaner, smoother inside operation with enough surface friction to eliminate top apron slippage and assure you of clean, uniform yarn.

Each of the two synthetic rubber compounds used to make this seamless apron is engineered specifically for the job it does. The black outer layer has excellent tear and abrasion resistance plus the high-friction surface needed to drive the top apron efficiently and without slippage.

The white inner layer has a much lower coefficient of friction. It permits the bottom roll to drive the apron firmly and smoothly and, at the same time, lets the apron slide easily over the nose bar without jamming or buckling. In addition, this white inside layer runs exceptionally clean. You'll find that it doesn't tend to collect loose fibers or to produce objectionable black deposits inside the apron.

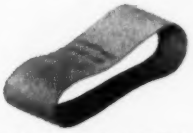
Vulcanized between the two layers of rubber is a core of strong cotton cords which prevent stretching or curled edges.

A test in your mill will show you conclusively how well this new NO-7075 apron—engineered for the job it does—works with the newest types of long-draft frames. Call your Armstrong man today or write to Armstrong Cork Company, Textile Products Department, 6410 Dauphin St., Lancaster, Pa. All Accotex Aprons are available for export.

APRONS

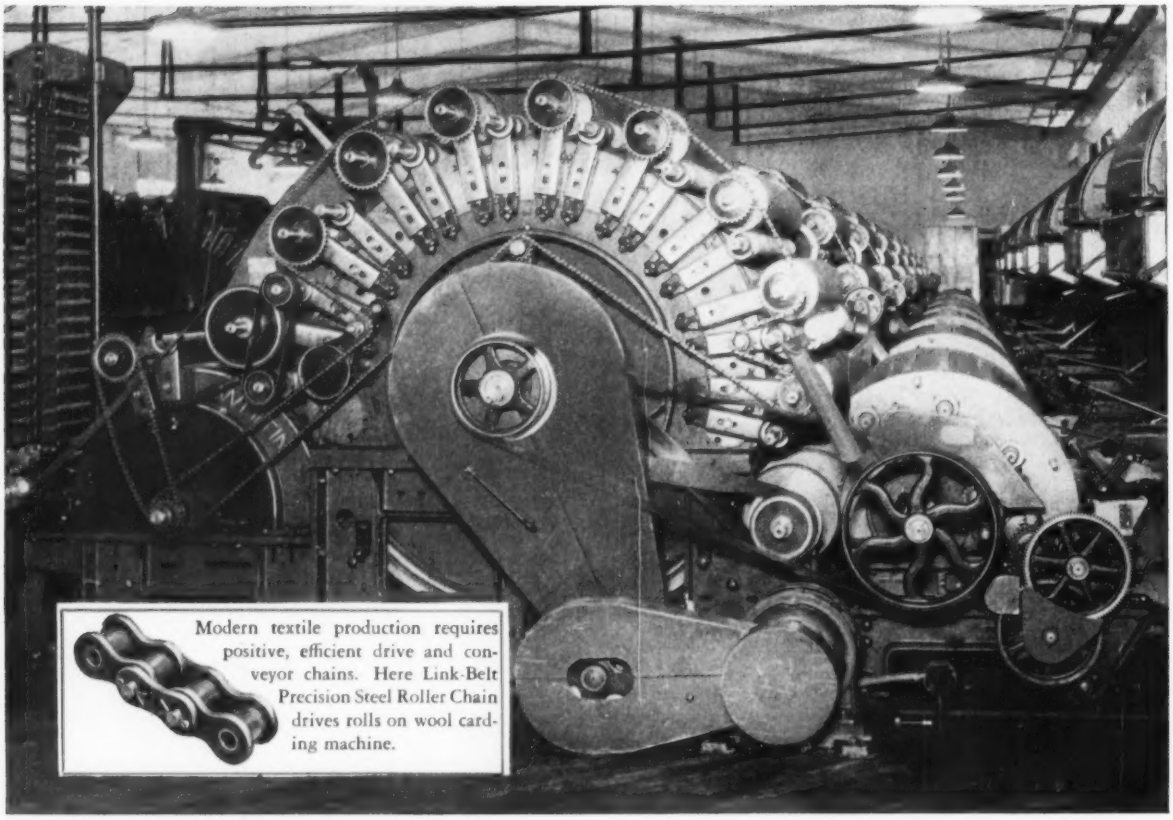
A complete line of top-quality aprons

FOR CLOSE-PIN CRADLES. The NO-7075 apron gives you smooth, clean operation on the latest type equipment.



FOR SINGLE-APRON SPINNING. The super-flexible NO-750 insures smooth slip-roll action needed for uniform yarn.

FOR DOUBLE-APRON SPINNING. The NO-700 Accotex is smooth and long wearing, first choice in hundreds of mills.



Modern textile production requires positive, efficient drive and conveyor chains. Here Link-Belt Precision Steel Roller Chain drives rolls on wool carding machine.

What is the right chain for your drive or conveying job?

Typical chains from the complete LINK-BELT line

Ewart Detachable Link-Belt—A widely used, popular chain for average or normal-duty service on conveyors, elevators and drives.

Class 400 Pintle Chain—Closed end design keeps out dirt, makes excellent service medium for drives, elevators, conveyors.

Double-Pitch Precision Steel Roller Chain, for conveyor, power transmission applications.

Silent chain, for smooth, high-speed drive service, from fractional to thousands of horsepower.

You'll find the answer in LINK-BELT's complete chain line... a size and type for every need

WHETHER it's a high-hp, heavy-impact drive or relatively slow-speed conveying service—you can get the *one* chain that best meets your needs from Link-Belt's complete chain line. Our engineers will be glad to work with you—help you select the right chain for your requirements. And you can be sure that any Link-Belt chain you buy is quality-built for longer life.

LINK-BELT

CHAINS AND SPROCKETS

LINK-BELT COMPANY: Plants: Chicago, Indianapolis, Philadelphia, Colmar, Pa., Atlanta, Houston, Minneapolis, San Francisco, Los Angeles, Seattle, Toronto, Springs (South Africa), Sydney (Australia). Sales Offices, Factory Branch Stores and Distributors in Principal Cities. 13.209-G

Quality from the Mill... Profit from the Machine!

Here is new profit possibility for operators large or small!

For the small mill, big-range efficiency . . .

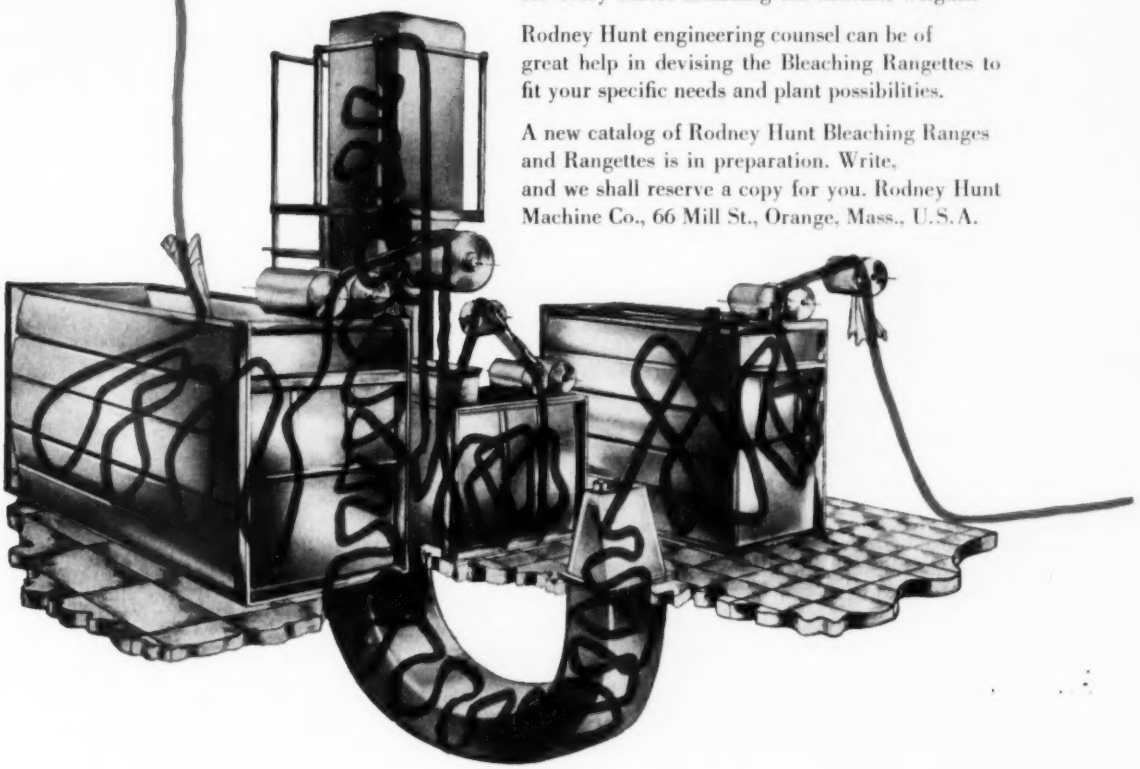
For the large mill, normal efficiency on special lots.

The NEW Rodney Hunt Bleaching RANGETTE* with Tensitrol® Washer

Some Rangettes need only 14 x 16 feet of floor area . . . give wide flexibility in capacity from 250 pounds per hour to 1500 pounds per hour. Full-size range units combine with Rangette units for greater capacity. All combinations have the unparalleled advantage of the Tensitrol Washer for every fabric including the heaviest weights.

Rodney Hunt engineering counsel can be of great help in devising the Bleaching Rangettes to fit your specific needs and plant possibilities.

A new catalog of Rodney Hunt Bleaching Ranges and Rangettes is in preparation. Write, and we shall reserve a copy for you. Rodney Hunt Machine Co., 66 Mill St., Orange, Mass., U.S.A.



*Tradename of Rodney Hunt Machine Co.

RODNEY HUNT®

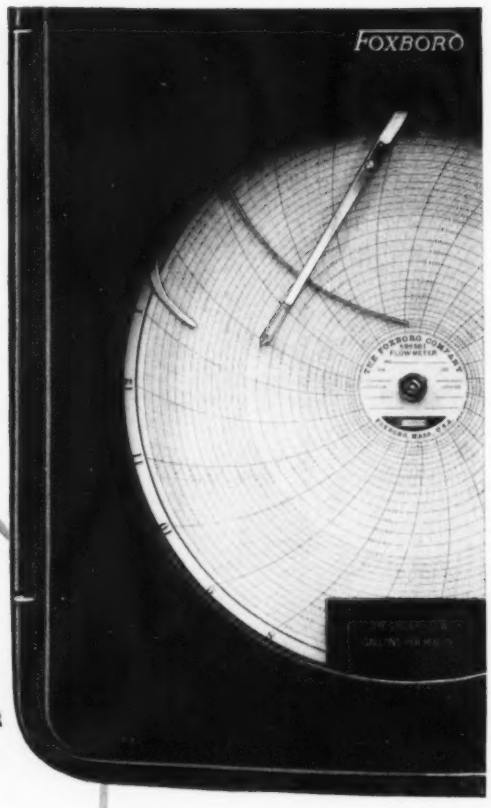
Manufacturing Engineers Since 1840

TEXTILE MACHINERY DIVISION

For more information, write direct or use Reader Service post card.

Know your flow... Reproduce flow rates

...in beam, package, or raw stock dyeing



Dye liquor flowing in either direction creates a difference in pressure between elbow taps A and B. Foxboro d/p Cell measures this differential and transmits it to instrument which records flow in gallons per minute.

WITH FOXBORO DYE LIQUOR FLOW MEASUREMENT you can record both outside-in and inside-out flow in your recirculating-type dyeing machines . . . *with no restriction to the flow.*

Chart record in gallons per minute makes it easy to standardize flow rates per pound of yarn in accordance with dyestuff specifications.

On beam-type machines, varying density can be compensated for with far less danger of "blowing" a beam. Method can also be used to measure individual flows on multiple kier machines.

This new Foxboro System for dye liquor flow measurement can be installed on any recirculating-type dye machine . . . normally without any modification of your equipment. For complete information, write for Engineering Data Sheet 220-52 and installation photographs.

THE FOXBORO COMPANY, 8410 NEPONSET AVE., FOXBORO, MASSACHUSETTS, U.S.A

FOXBORO REG. U. S. PAT. OFF. — **DYE LIQUOR FLOW MEASUREMENT**

FACTORIES IN THE UNITED STATES, CANADA, AND ENGLAND

Original and Genuine

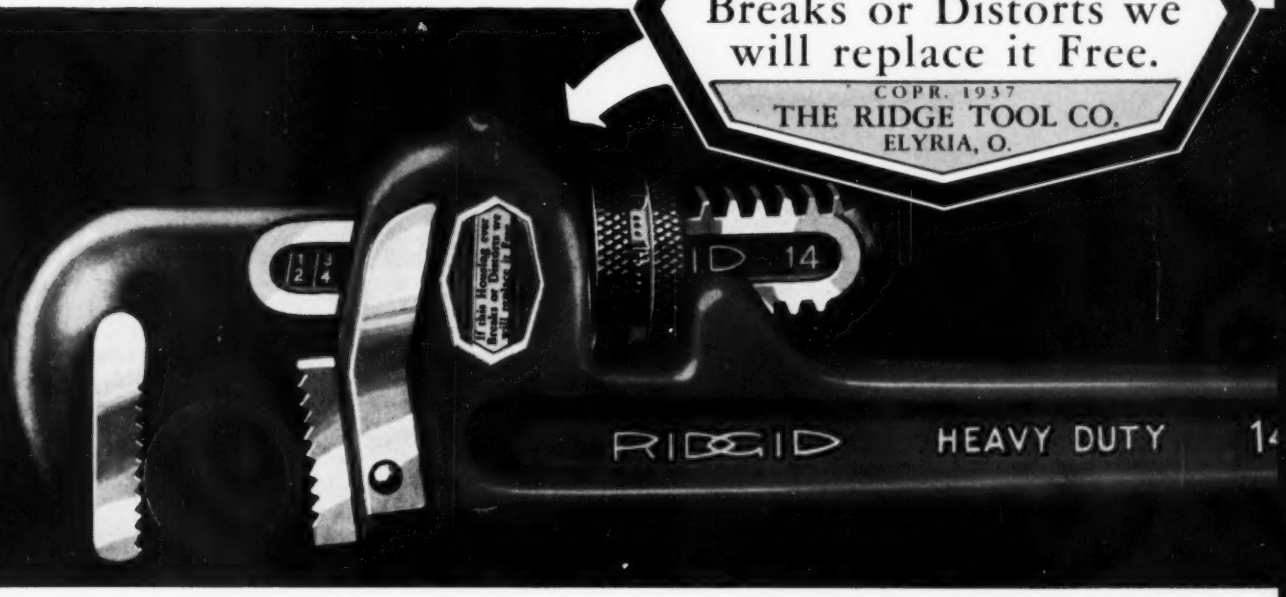
RIDGID

HEAVY-DUTY PIPE WRENCH

Read this guarantee —on millions of RIDGID wrenches sold to date.

1st with guaranteed housing—
still the only one!

★
UNCONDITIONAL GUARANTEE
If this Housing ever Breaks or Distorts we will replace it Free.
COPR. 1937
THE RIDGE TOOL CO.
ELYRIA, O.



1st *with replaceable jaws*—non-slip, non-lock, instant grip on pipe.

1st *with adjusting nut in open housing*—always spins easily to pipe size, 6″ to 60″.

1st *with handy pipe scale* on hookjaw.

1st *with comfort-grip I-beam handle*—with handy hang-up hole.

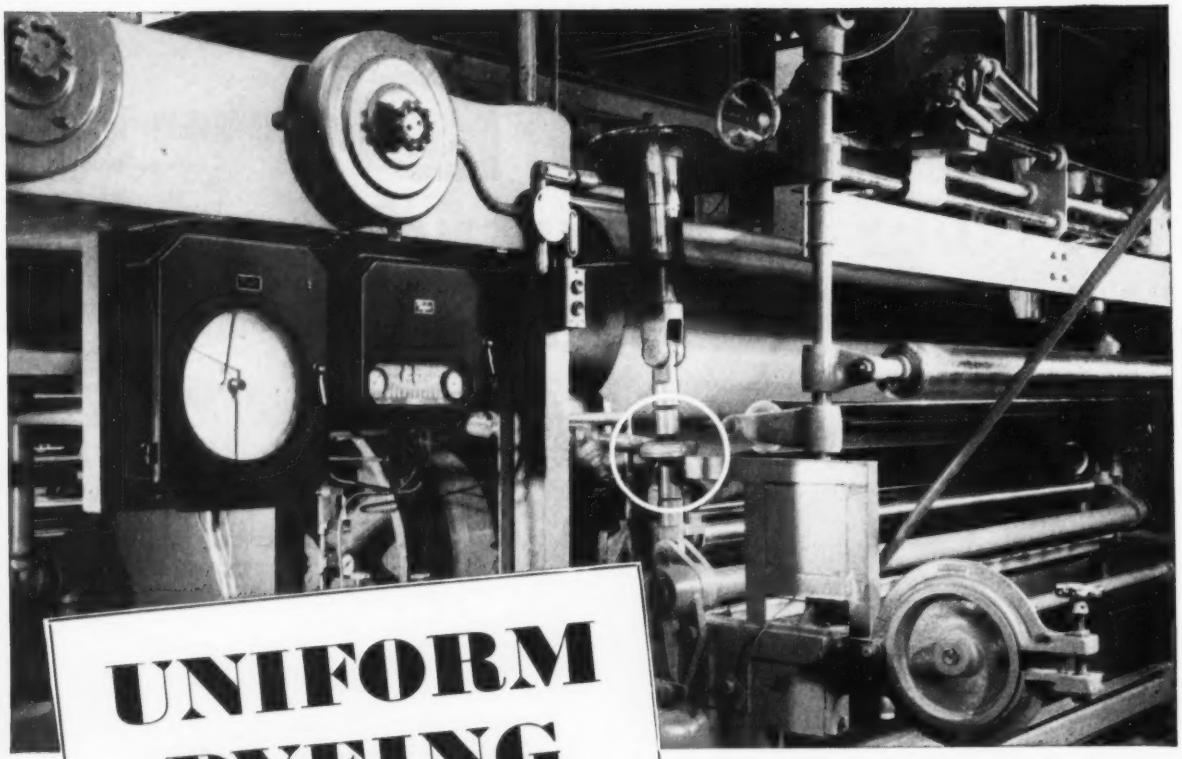
1st *with end pattern pipe wrench*—for pipes crowded or against flat surfaces.

No wonder RIDGID is the world's most popular pipe wrench. Buy genuine RIDGID's for easier work and extra economy—at your supply house.

THE RIDGE TOOL COMPANY, ELYRIA, OHIO, U. S. A.

RIDGID

Work-Saver Pipe Tools · Most Popular in the World



UNIFORM DYEING

is easy with this Taylor Dye Padder Control System!

It's easy because you can adjust Squeeze Roll Pressure the way you want it, and you're sure of dye liquor level.

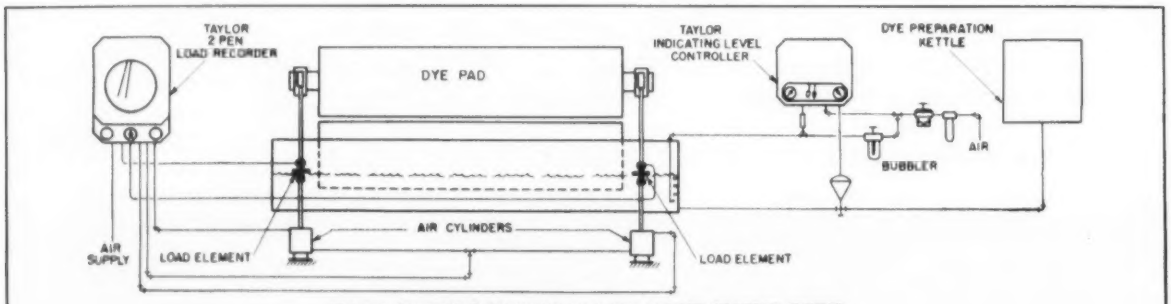
HERE'S HOW IT WORKS:

A FULSCOPE* Liquid Level Controller maintains the level of the dye in the dye box, to assure uniform immersion of the cloth.

A Taylor Volumetric Load Recorder gives an accurate indication of the pressure exerted across the squeeze rolls, permitting uniform dye penetration and development and precise adjustments in the loading of the squeeze rolls. This is the result of recent developments in Taylor Volumetric Load Measuring elements which afford a wide variety of ranges, greater range suppression, greater over-range protection, and greater energy for positioning the pen or actuating a control mechanism.

The Diaphragm Type measuring element (circled above) is made of hardened alloy steel, connected to a Bourdon spring in the recorder by a mercury filled capillary tubing. It is installed in the direct line of force, and is independent of friction or other factors affecting accuracy of measurement. It can be used on many other roll processing applications, such as slashers, calender rolls, etc. **For full details,** ask your Taylor Field Engineer, or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

*Reg. U.S. Pat. Off.



TYPICAL SCHEMATIC DRAWING OF A DYE PADDER CONTROL SYSTEM

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

CRUCIBLE FINE STAINLESS WIRE...

now available — all sizes... all tempers

Users of fine wire can now obtain prompt delivery of Crucible stainless steel wire . . . in all diameters . . . in all tempers from full hard to dead soft. And Crucible's fine wire comes in all standard grades — with a bright surface or a variety of metallic and nonmetallic finishes tailored to meet your specific application.

Our new fine wire mill is equipped with the latest facilities for annealing, pickling, drawing and finishing. Our mill metallurgical control setup is the latest word, too, to assure you that every spool and coil produced conforms to Crucible's high standard of quality — dimensional, physical and surface uniformity that is unsurpassed in the industry.

No matter what type of wire you use — whether it be cold heading wire, weaving wire, spring wire, needle wire, screen wire, cable wire, or a host of other types — our new mill is equipped to serve you. For prompt delivery of quality stainless wire, call your nearest Crucible warehouse.

CRUCIBLE first name in special purpose steels

53 years of Fine steelmaking

STAINLESS STEEL WIRE

CRUCIBLE STEEL COMPANY OF AMERICA, GENERAL SALES OFFICES, OLIVER BUILDING, PITTSBURGH, PA.

REX HIGH SPEED • TOOL • REZISTAL STAINLESS • MAX-EL • ALLOY • SPECIAL PURPOSE STEELS

ARMOUR'S NEW TWIN DETERGENTS

SOLVE TWO TOUGH SCOURING PROBLEMS!

ENERGETIC

The powerful, "all-round" detergent that saves you money from boll to bolt

This little girl's print dress material has to be sharp and clear with clean, bright grounds. The outstanding suspending qualities of ENERGETIC synthetic detergent make it ideal for this operation. ENERGETIC also possesses maximum detergency and stability to all water conditions.

ENERGETIC is a powerful, concentrated nonionic detergent that saves you money in most of your scouring operations. ENERGETIC is supplied 90% active — so you usually require only ⅓ as much as with conventional anionic detergents. It is a low-sudsing, unbuilt detergent which, when combined with proper builders, results in further economy. Since ENERGETIC is non-substantive to textiles, it does not build up on the cloth and the scouring solution need not be replenished as often as with other products.

ENERGETIC was especially designed by Armour to provide:

Maximum detergency action
High soil-removing ability
High soil-suspending property
Excellent emulsifying action
Good wetting properties
Good surface tension-lowering ability
Excellent stability to textile chemicals

Performance evaluations have proved that ENERGETIC possesses all these qualities. Tests have demonstrated its superior wetting ability at all scouring temperatures. The wetting time decreases sharply above 150°F. until, at temperatures near the boil, ENERGETIC is a much more effective wetting agent than most other detergents. That's why ENERGETIC can save you cloth, time and money.

ENERGETIC-S

That new detergent designed for use with aromatic and petroleum solvents!

That's a new, synthetic fiber dress the little girl is wearing. And there's a new, efficient way to prepare acrylic and polyester fibers for printing and dyeing! It's ENERGETIC-S, Armour's new liquid nonionic detergent designed to be used in the presence of petroleum and aromatic solvents such as Varsol* and xylene. Here are two new formulas that are proving highly successful in boiling-off synthetics:

Dacron** — Scour with 0.25% ENERGETIC-S, 0.25% ammonia, basis wt. of sol., for 15 min. at 160°F.

Orlon** — Wet out by padding in a cold solution (0.4% ENERGETIC-S, 2.0% Varsol*, 97.6% water). Allow to stand and then boil-off in soap and soda ash. Treat the fabric with 0.25% sodium chlorite, 0.25% oxalic acid, and 0.25% ENERGETIC-S based on the weight of the solution for about 1 hour at 200°F.

*"Varsol" is a registered trademark of the Esso Standard Oil Company.

**"Dacron" and "Orlon" are registered trademarks of the E. I. du Pont de Nemours Co. (Inc.)

ENERGETIC-S is an ethylene oxide condensation product, 94% active, and essentially neutral and salt free. It is soluble or dispersible in water, alcohol, ketones, petroleum fractions, and aromatic compounds. The detergency of ENERGETIC-S appears to increase about 10% when used with petroleum solvents to remove waxes, greases, and sizing from greige goods during wet finishing operations.

ENERGETIC-S has proven especially economical in desizing cotton, boiling-off synthetics, hosiery finishing, and machinery cleaning. It has proven far superior to other detergents in doing the job it was designed for — solving your detergent problems with the modern textiles of today while saving you cloth, time and money!

New detergents for modern textiles

MAIL THIS COUPON TODAY!

Armour Industrial Soap Department
Armour and Company • 1355 West 31st Street • Chicago 9, Illinois

Please send me:

- ☐ 1 pint free sample of ENERGETIC
- ☐ 1 pint free sample of ENERGETIC-S
- ☐ 5 gal. trial order of ENERGETIC
- ☐ 5 gal. trial order of ENERGETIC-S
- ☐ Free Booklet "ENERGETIC and ENERGETIC-S"

*Name*_____ *Title*_____

*Firm*_____

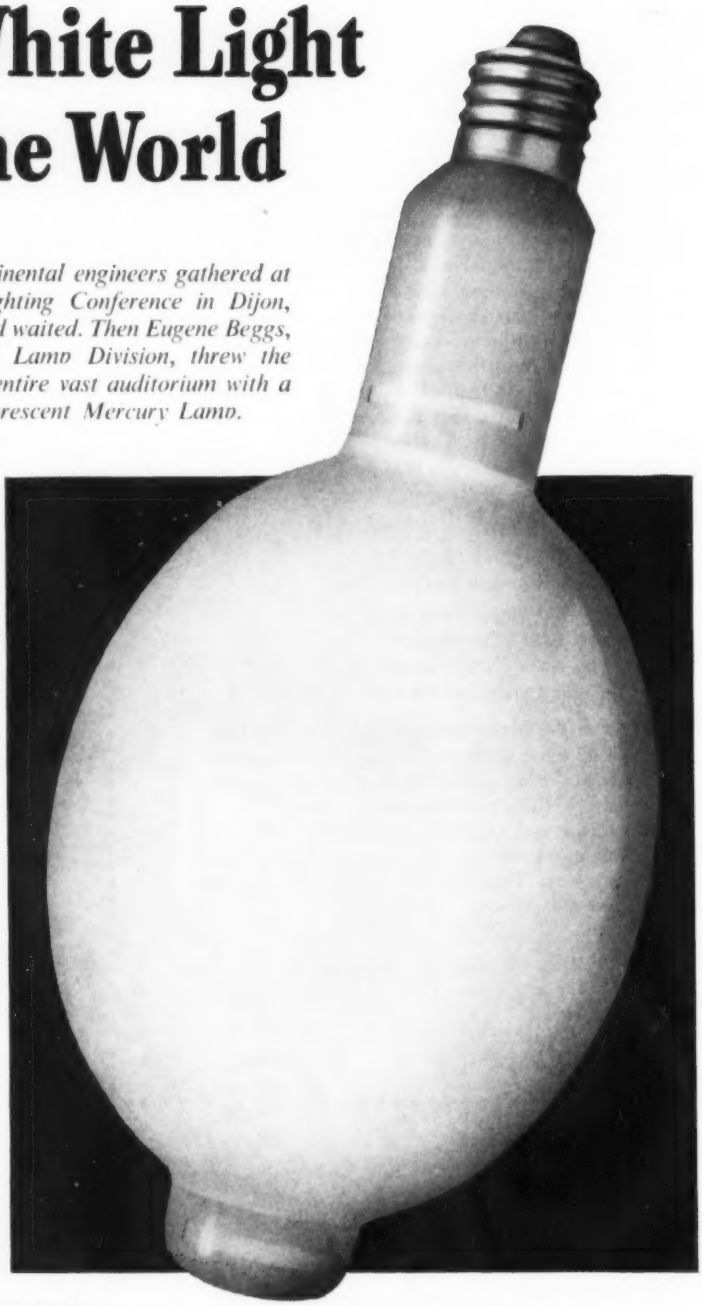
*Address*_____

*City*_____ *Zone*_____ *State*_____

 For more information, write direct or use Reader Service post card.

International Engineers Applaud Cheapest Source Of Mass White Light In The World

Several hundred continental engineers gathered at the International Lighting Conference in Dijon, France, sat quietly and waited. Then Eugene Beggs, of the Westinghouse Lamp Division, threw the switch—lighting the entire vast auditorium with a single 1000 watt Fluorescent Mercury Lamp.



OVER 10 TIMES THE LIGHT HOURS OF AN INCANDESCENT

This lamp converts the formerly wasted ultraviolet energy of the mercury arc to visible light. The result is *white light* from a Mercury Lamp. It gives 2½ times the light of an incandescent of equal wattage. And it has an average rated life of 5000 hours . . . 5 times that of a regular incandescent. The assembled Europeans applauded. This was their first view of America's newest, most significant contribution to light sources.

LIGHTING COSTS DROP

European businessmen have long appreciated the economy of Mercury Lamps and have used them extensively for years. They know power costs drop because you get more light for less wattage. Maintenance costs drop, too, with fewer, longer-lasting lamps to replace. Americans now have all the advantages of mercury lighting plus white light without incandescents for color correction.

Free booklet tells how to reduce your costs

If you are concerned with lighting high bay areas in factories and terminal buildings . . . or railroad yards, parking lots and streets . . . Westinghouse Mercury Lamps can reduce *your* costs. The facts are in a 24-page booklet that's yours—free for the asking.

To get your copy promptly, write today to:
Westinghouse Lamp Division, Dpt. TW-10, Bloomfield, N. J.

YOU CAN BE SURE... IF IT'S

Westinghouse

The Reader AUDITED PAID ABC CIRCULATION *His Mark*

THE ABC that appears in the symbol at the top of this page stands for Audit Bureau of Circulations. The symbol itself is an emblem of cooperation, in which every subscriber to this magazine has an interest.

The Audit Bureau of Circulations is a voluntary, non-profit, cooperative association. It was founded in 1914 and now consists of 3450 advertisers, advertising agencies and publishers in the United States and Canada. This magazine is proud to be a member.

ABC originally was set up to help take the racket out of publishing, to eliminate the waste and guesswork then so prevalent in publishing and advertising, to establish order and confidence in place of the misunderstanding and misrepresentation that arose from unverified circulation claims and dubious circulation practices. Its mission was to protect the interests of both readers and advertisers.

THIS IT DID by first defining the term "paid circulation." Then it established standards and rules to govern subscription sales practices and records. Finally it set up an auditing organization to verify the claims and report the facts concerning the circulation of each member publication. It now maintains on that job a working staff of sixty-five full-time auditors. So the ABC symbol has become the hallmark of circulation standards and advertising values. Each member publication must maintain those standards if it wishes to retain its membership and display the ABC symbol.

This ABC audit is no perfunctory affair. When a business publication, such as this one, becomes a member of the Bureau, it agrees that the auditors shall have "the right of access to all books and records." Their inspection, therefore, may cover any part of its operations. Original subscription orders, payments from subscribers, paper purchases, postal receipts, arrears of payments, and many more items are painstakingly checked by the auditors. In many instances they go behind the records to seek verification from subscribers themselves as to the terms of their subscriptions.

IN DOING ITS JOB, ABC has created many values for both publishers and readers as well as for advertisers. That is because the publication that becomes a member of ABC thereby offers the strongest possible guarantee of its primary devotion to the interests of its readers. The function of a business magazine is to be useful to its readers. When this service is rendered by an ABC publication, it is constantly subject to the practical test of reader acceptance and approval. As each subscriber has the right to purchase or refrain from purchasing an ABC publication, that collective right confers upon the readers the power to say whether or not the publication will survive. Thus the report on its ABC audit provides the most direct assurance that a publication stays in business only because of a voluntary demand by readers who find its editorial service responsive to their needs.

Naturally, the editor of each business publication follows closely the score thus racked up by his paper in its ABC reports. In the scope and tone of his editorial coverage and treatment, in the selection and presentation of his editorial content, he must constantly labor to maintain and enhance the readers' acceptance of his efforts. That is why the editorial standards established by ABC publications set the editorial standards for all publishing. That is how the ABC constantly stimulates its member publications to become even more useful to their readers.

AND THAT IS WHY the ABC symbol has become the Mark of the Reader, a constant reminder that his willingness to pay for an ABC publication is the acid test of its value both to him and to its advertisers.

McGraw-Hill Publishing Company

SHOCK RESISTANT . . . Today's high speed knitting machines demand needles conditioned for shock. Textile needles with their special steel formulas, superior tempering and scientific controls — automatic and electronic — assure shock resistance. Results — long needle life with proven production savings.

Add strength and flexibility as two more Textile needle advantages and you see why they are so highly rated in the industry. Try them now for smooth knitting, ultra-fine fabrics and increased profits.

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TEXTILE WORLD
October, 1953 - Vol. 103 - No. 10

WHY PEOPLE BEHAVE As They Do

▸ Most supervisors understand more about the behavior of machines than of people, but most of the supervisor's problems are concerned with human behavior. To understand people better, remember that —

▸ Man is a creature of feelings. He is ruled by emotions rather than by reason. The feelings of a worker go back to his experiences in infancy, childhood, and adolescence. The principle of guiding human behavior is consistency.

By JOSEPH E. MOORE, Ph.D.
Department of Psychology, Georgia Tech

SOCIAL JUDGMENT stands out as a trait of good supervisors. A good supervisor has the ability to put himself in the place of another man and sense how that man would feel. The better supervisors know more about people's feelings.

Man is a creature of feelings and emotions. His early experiences mold his future behavior. Stomach ulcers come from fears and strong feelings of uncertainty; big fears and ulcers from little anxieties grow. A secure person can be calm. A secure person can laugh at himself. The insecure, fearful person is on edge; he must defend himself at all cost. An insecure person is an adolescent on

Based on a paper presented at the Southern Industrial Relations Conference, Blue Ridge, N. C.

guard; he must always be right or pretend to be right, and he almost never admits a fault or weakness.

Workers Are Bundles of Feelings

The new employee comes to every new job feeling some degree of uncertainty. A worker is uncertain whether he will like the new job, whether he can do the job satisfactorily, and whether he will be liked by the people associated with him. Also, a change in a man's work assignment generally brings feelings of anxiousness.

The adult man working on a job carries a mass of feelings that have grown with him. Deep within him there is the echo of his father's or mother's voice praising or blaming him. Here is a small sample of these echoes, these whispers, feelings, or voices of conscience that motivate a worker: "Do a fair day's work for a fair day's pay." "Do the best you know how." "Push your work; don't let your work push you." "Never loaf on a job." "You never can do anything right." "You can never take a suggestion." "You are too sensitive to criticism." "You are too slow." "You are too headstrong." "You don't follow directions." "You don't have confidence in yourself." "You leap before you look."

These are only a few of the many samples of feelings—deep feelings—that emerge to color and control the worker's behavior. You are working with men who have developed what might be called hair-trigger feelings. You are dealing with men who have, through the years, built up a reservoir of feelings, fears, and, in some cases, deep resentments. These strong feelings can be triggered off or set in motion by almost anything a foreman or supervisor says or does. If you scratch the surface of a man, you will find the feelings of the child showing through.

If we are going to supervise men, we need to understand their feelings. We also need to know our own feelings. We are not responsible for what we see; we are responsible for the interpretation we put on what we see. Our own feelings color and sometimes cloud what we see. The true understanding of others' feelings comes after a person has some insight and understanding of why he feels the way he does.

There Are No Short-Cuts To Understanding People

There are no "gimmicks," no "six easy lessons," to understanding human nature. Your own good hard-headed judgment has warned you against easy, oversimplified answers.

Man at birth starts the long journey of life showing his feelings. He comes into this world yelling for attention. If he is not demanding attention, he is crying out against being manhandled. Here we see the infant shadow of the full-grown man. The infant yells when he is hungry. He squalls when he is in pain. He shrieks when he is frightened.

In the infant we see feelings—pure raw emotions—in the driver's seat. The baby, child psychologists tell us, comes into the world with only three basic forms of reaction: (1) He cries if restrained, or in plain, simple terms he yells when his hind legs are held tightly; (2) he cries in response to a loud noise; and (3) there is a fear or a gasp if his support is suddenly taken from him. Man, if the psychologists are right, then builds all other fears on these three basic patterns of behavior.

Man's first tendency is to feel before he thinks. As a baby he cuddles up and relaxes in sleep and contentment to the warmth and assurance of his mother's body. He learns to smile and chuckle to the baby talk of his parents. He learns early that when he nurses he had better not bite too hard. If he does bite too hard, he gets a whack on the seat of his pants. This experience is likely to be his first with pain.

When workers are given a chance to tell us what treatment they expect from industrial leaders, they mince no words. In my own study of supervisors made during the past three years, I asked each worker to think of the one foreman he considered the very best and most effective. He was then asked to select the one word that above all others told what made this foreman superior.

The worker then selected the foreman he considered the poorest. He chose the one word that best described him.

Here are the words selected by 88 women to tell what they thought made the best and poorest foremen or supervisors. Only the words ranked most often are given here. Only the five more frequent choices are given.

BEST

1. Considerate	21
2. Patient and understanding	19
3. Appreciative	6
4. Fair	3
5. Human	3

POOREST

1. Egotistical or self-centered	9
2. Overbearing or arrogant	5
3. Dictatorial or arbitrary	5
4. Too flighty, unorganized	4
5. Uncooperative	4

Here are the words selected by 135 foremen and supervisors to describe supervisors.

BEST

1. Understanding	38
2. Fair	23
3. Considerate	17
4. Good leadership	10
5. Sincerity	7

POOREST

1. Domineering or overbearing	25
2. Unfair	14
3. Egotistical	10
4. Inconsiderate	10
5. Buck passer or evades issues	6

You will note the overwhelming choice of words has to do with *feelings*, not cold, logical processes. The best supervisors are considerate; they are understanding; and they avoid being overbearing and egotistical.

Consistency Is the Key To Dealing With People

The infant learns early the meaning of consistency. He learns to associate the rattle of the doorknob with pleasant attention and feeling. He later learns that a word means a specific thing. He learns or should learn that when his father or mother says something they mean it. "No" means "No." He should be able to count on what is said to him.

This principle of consistency is basic to all behavior. For example, many of the emotional problems in children as well as adults result from the violation of this principle. One parent will be stern and unrelenting, the other vacillating and yielding. The child in such a situation does not know how to act; he cannot get security; he cannot feel right. Parents, no matter how stern or easygoing, should be that way day in and day out. Problem parents (some people say there are no problem children, only problem parents) are those who love their children excessively one moment and then, without cause in the eyes of children, whale the tar out of them the next moment.

The principle of consistency must also be applied to adults who must meet problems with whatever experience they have had. Adults, individuals, workers should be treated with consistency by foremen, supervisors, and other members of management. If the workers know what to count on, they have a sense of security and will behave with the dignity natural to them.

Management, too, must be consistent with the foremen and supervisors: it must keep its promises. If management gives orders without the supervisor's knowledge, if it passes the buck, if it changes instructions without telling foremen and others, it is inconsistent and is making its key people feel uncertain and insecure. Good morale and positive attitudes are seldom found in a plant where the management is vacillating and inconsistent in its behavior towards the supervisors and workers.

Basis of Future Behavior Is Laid in Childhood

The child's feelings lay the basis for future actions. His actions are governed by his emotions and all his glands. We brag on him or praise him and he feels important. The boy tries to imitate his dad. He tries to walk, talk, and gesture like him, and even tries to repeat his nervous habits. His parents direct him by words of praise and blame. They tell him that he is "daddy's little man," and "such a big boy." They shame him by saying "Tush-tush," "Naughty-naughty," "That's not nice," "You should be ashamed," "You are a bad boy," "Your daddy will not like that," and "You will get a spanking for that."

During the impressionable years, the child fears dad's lecture at the dinner table. Some dinner tables are almost like courts hearing cases. Under such conditions, when the child starts to eat, the food becomes a lump in his throat and it will hardly go down because he is afraid. He is afraid of what dad will say or do. His feelings are all stirred up. He reasons little; he feels much. These anxieties and fears can be the beginning of stomach ulcers.

Status enters the developmental picture after the age of 12. The boy wants to do like others because he wants to be accepted. He says "They think," "Others do it," "The Joneses have one." The lad's feelings can be deeply hurt or helped by others outside the home and family circle. He wants to be like the other boys. He wants others, especially other boys, to like him and to accept him. He wants to be one of the gang. He wants his blue jeans, his T-shirts, and his hot rod. His actions are ruled by feeling, not logic. This is the period when he thinks parents are dumber than usual; and he thinks that others, especially teen agers, have all the wisdom and brains. This is the adolescent period of hurt feelings and emotional scenes.

Teen Agers Want Independence

Emotional scenes indicate a striving for independence. The boy wants independence; he feels like a man and acts like a fool. His behavior makes his dad think he does not have any sense in his head. In fact, his behavior at times suggests that no reasoning whatsoever is being used. This is the period when fathers forget their own boyhood—their feeling years—and try to pretend that all their boyhood actions were the result of wise, logical, cold reason.

The status years are years of fear—the fear of being rejected by others. The adolescent wants to do a man's work. He wants to be praised. He wants to be helpful. He thrills at the sound of "Mr." before his name. He at times puts up a front of "not caring," of "kidding" others, of "make believe"; because for him, to fail hurts so deeply that he feels he cannot stand it.

The adolescent is eager to show off his strength. He quickly calls others dumb because deep within him he fears he is not any too bright. He especially resents slights and sarcasm. He is quick to take offense, and he will fight at the drop of a hat. He feels his ideals. His behavior tells you that feelings, not reason, are in the driver's seat.

Now, let's leave the adolescent and take a look at the "feeling man." We have common expressions and labels for him. We say that he is "thin-skinned," or "tender-minded." He is "quick to fly off the handle," and he "blows his top." We warn others that he "loses his head," and is "easy to get hot under the collar." These expressions are a very few of many expressions about the feeling man.

If we look about us we can see adults who are still children—yelling to be taken care of or pouting when they are neglected. In his book *Return to Religion,* Dr. Henry Link calls this world the "I"-centered world. Dr. Link has said that all civilization and progress depends on changing the "I" centeredness to an outward "you" centeredness. Thinking about others more and yourself less is another way of putting it.

We are dealing with the hard, basic facts of industrial leadership. Workers behave with dignity. They cannot be driven; they cannot be made to work. However, they can be led.

Working people deeply resent egotistical, self-centered, overbearing bosses. They want understanding and consideration. Listen to your workers; they will tell you what they want. They will tell you what makes people behave as they do.

WELTS are treated carefully in boarding to avoid excessive stretching. Note how the boarder holds the welt as the stocking is pulled on the form.

FINAL ADJUSTMENT is given to welt to insure a snug fit on the form. Production is lowered by this attention, but Vanette finds that improved quality more than pays for the production loss.

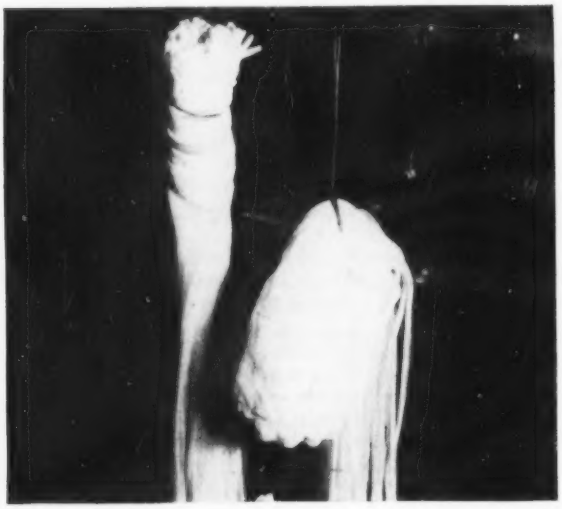
Watch These Points for Successful DUNN-SYSTEM Operation

If you take these tips—

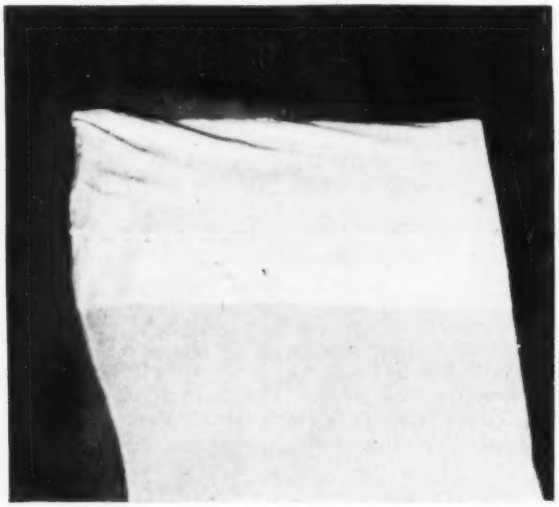
- adjust stitches properly
- don't tie bundles at the welt
- avoid stretching the back
- board on wider forms

. . . you can get these advantages—

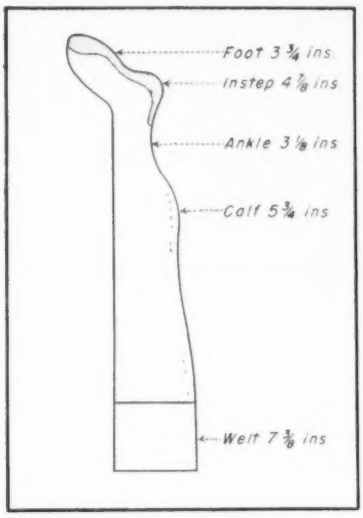
- direct-labor costs are cut
- fewer pulled threads are made
- finishing materials are saved
- softer and more fully finished hose are obtained



STOCKINGS AT LEFT are too tightly bundled to allow even penetration in presetting. Stockings should be tied loosely, as shown at right.



WRINKLES IN WELT are caused by tying welts too tightly, stretching welts, and wrong conditions in the presetting cabinet.



BOARDING FORMS for Dunn-system hose are made wider than the forms for conventionally treated hose. Leg is knitted slacker to allow for this extra width.

By H. B. LeFEAUX
Consulting Editor, TEXTILE WORLD
Superintendent, Vanette Hosiery Mills

TO GET THE BEST RESULTS from the Dunn system,* Vanette Hosiery Mills, Dallas, Texas, has found that stockings must (1) be knitted tighter in the welt and looser in the leg, (2) not be tied at the welt, (3) not be stretched at the back during boarding, and (4) be boarded on wider forms.

The Dunn system requires only one boarding. No special drying operation or equipment is used. The fabric is set before the stockings are stretched over the forms so that length distortion is minimized. As the stitches are not stretched horizontally before or during setting, the stitch formation remains the same as when knitted. The close and even wales that result produce a finer-gauge appearance.

Knit Tighter Welts

Loosely knitted welts produce an unsightly finish on Dunn-processed stockings. A No. 1 slacker button is used to knit 44 courses per inch on a 60-gauge, 15-den. stocking with a 40-den. welt. A finished welt stretch of 12½ ins. is obtained with this machine setting. A 7-tpi. welt yarn has been found to knit a smoother-appearing welt.

Forty-seven courses per inch in the gray have been found to be most satisfactory in the leg of 60-gauge stockings knitted from 15-den. yarn on pirns.

Tying dozens up with a tight string around the welts should be avoided. Wrinkles are set in the welts during presetting, and the wrinkles are not removed in finishing. A cotton-looper clip tied loosely below the shadow welt allows all the welts to be evenly penetrated during presetting.

Improper setting conditions contribute to welt wrinkles. The Paramount Universal presetter presets monofilament stockings at atmospheric boiling-point temperature in pure-water vapor. The saturated atmosphere provides more-uniform dyeing. The stockings are treated at 210° F. for 15 mins. and dried for 5 mins.

Presetting for the Dunn system can be successfully done in a Lydon Box set at 205° F. dry bulb and 200° F. wet bulb. A complete cycle of 55 mins., including drying time, is satisfactory.

The H&W Box can also be used successfully to process Dunn-system stockings. The main point to watch when you use any equipment is to check that the presetting cycles are constant. Color variations in dyeing are noticed where the presetting cycles are not kept constant.

Cover the Outside Of Your Presetting Truck

Uneven dyeing also results when the outside stockings on the presetting truck get too much vapor or steam. We have overcome this problem by covering the outside of the presetting truck with a heavy material. Even penetration is insured because the steam or water vapor penetrates the stockings from the top and bottom of the truck.

Presetting-cabinet controls should be calibrated at least once a month to double check on the chart readings. Some mills may have to work out their own presetting conditions based on local conditions.

Proper handling of the welt by the seamer can improve the finished appearance of the stocking. Seamers must be instructed to avoid stretching the welt as it is guided into the uncurler. The welt should be seamed so as to close up more than half the welt length.

Gray inspectors should handle the stockings without stretching the welts. We use the Ammon inspecting machine in conjunction with the Dunn system. This method eliminates a lot of handling as the stockings are blown straight into the dye bag. Each dye bag contains 3 or 4 doz. stockings.

Boiling off is done in a 100-lb. machine with 5 lbs. of soap and 5 lbs. of sodium-tripolyphosphate anhydrous.

The goods are run at 180° F. for 30 mins. Two rinses at 180° F. are followed by a cold rinse.

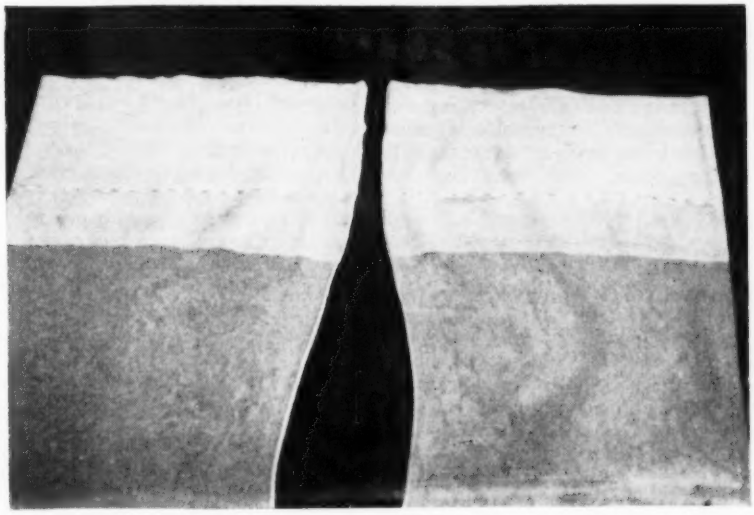
Many of the problems in dyeing Dunn-processed stockings have been solved, dyeing has been made easier, and costs have been reduced because smaller amounts of materials are being used. The dye should be properly mixed with a good dispersing agent.

Dye at 170° F.

Dyeing should start at 100° F.,

(Continued on page 190)

**The Dunn System is now also known as the Paramize Process and is patented by the Paramount Textile Machinery Co. Licenses are issued to mills in payment of royalties of from 1¼¢ per doz. for 250,000 doz. pairs to ¼¢ per doz. for 2,000,000 doz. pairs per year.*



OPENING IN THE WELT is too long in the stocking on the left. Seamer should leave an opening a little less than half the welt length.

COTTON Basically Altered By New Chemical Treatment

► Cyanoethylation—the modification of cotton with acrylonitrile—bleaches, adds luster, prevents rot, improves dyeability, and increases abrasion resistance and strength

► The process, done presently in yarn form, uses a package-dyeing machine and uses about 4c worth of acrylonitrile per pound of yarn

CYANOETHYLATION, a brand-new chemical treatment of cotton, was recently announced, but few technical details were released. To get the full story—the chemical reaction, how to do it in the mill, properties of the changed cotton, and probable cost—TEXTILE WORLD called on C. W. Bendigo, former editor-in-chief, who is now with American Cyanamid Co. Here's how the conversation went:

TW: *What is cyanoethylation?*

BENDIGO: Cyanoethylation is the term used to describe the treatment of cotton with acrylonitrile, a basic chemical in Orlon, Acrilan, X-51 and Dynel.

TW: *What does it do to cotton?*

BENDIGO: The reaction produces a cotton that is bleached, is stronger, is more abrasion resistant, dyes more deeply, and is extremely rot resistant. The cotton also maintains more of its strength at elevated temperatures.

TW: *How is it done?*

BENDIGO: In an ordinary package-dyeing machine, put a 1% solution of caustic soda on the yarn and immerse it in 100% acrylonitrile. The amount of reaction is determined by the time and temperature of the treatment.

Neutralize with acetic acid, and rinse three times before extracting and drying.

You can get more information in the book *Chemistry of Acrylonitrile*, published by American Cyanamid Co.

TW: *Has the process been tried on a commercial scale?*

BENDIGO: Yes, two successful commercial runs have been carried out by Aubrey Hobbs at Standard-Coosa-Thatcher Co., Chattanooga, Tenn.

TW: *Who developed the technique?*

BENDIGO: Research on cyanoethylation was carried out at the Institute of Textile Technology. A related method, for piece-goods treatment, is being studied at Southern Regional Research Laboratory.

TW: *Is this new process patented?*

BENDIGO: Application has been made by ITT, and there are other related patents in the field.

TW: *How much does the process cost?*

BENDIGO: We don't know yet. Right now with acrylonitrile at 36¢ a pound, it takes about 4¢ worth to treat a pound of yarn.

Recovery of the partially used acrylonitrile is important for keeping the price down. Commercial equipment is now being designed to work with package-dyeing machinery.

TW: *How about going into detail on the properties of cyanoethylated cotton?*

BENDIGO: OK. I'll be brief.

Strength: Treated yarn is 30 to 35% stronger although individual fibers tested do not show this increase in strength. If cyanoethylated yarn is later mercerized, strength is 50% more than that of the original yarn.

Elongation. Treated yarns have greater elongation than untreated yarns. Mercerization, you know, normally reduces elongation.

Abrasion resistance. Fabrics made from cyanoethylated cotton stand appreciably more cycles on the Stoll tester than fabrics made from untreated cotton.

Rot resistance. The original project on treatment of cotton with acrylonitrile was to get rot resistance; so it is not surprising that treated yarn containing 3.5% added nitrogen lost no strength when it was buried for two weeks. Untreated cotton disintegrated in five to seven days. There is practically no change in hand over fabrics that are merely scoured.

Dyeability. With all classes of dyes normally used on cotton, less dyestuff is needed to match shades on untreated cotton. Tests showed that a 2% dyeing on cyanoethylated cotton matched or exceeded a 2.8% dyeing on untreated cotton. Fastness was equal. Of even greater significance is the fact that treated cotton accepts acid dyes, which do not normally dye cotton. This property opens up the possibility of union dyeing with wool and permits use of a class of dyes known for their color value.

TW: *Is the chemical structure of cotton affected?*

BENDIGO: Definitely. Treated cottons behave differently, maybe because the amorphous regions of the fiber are increased at the expense of crystalline regions. Cyanoethylated cottons can be swelled enormously, and the resulting fiber responds to dyeing and finishing treatments beyond anything you've ever seen. We'll be able to talk more about this after the patents go through.

TW: *Is cyanoethylation the same as T-7?*

BENDIGO: Yes, T-7 is the name given to the modified fibers by ITT.

TW: *Is cyanoethylation similar to acetylation?*

(*Continued on page 218*)

A good working procedure in one dyehouse may be considered foolhardy in another plant. Some things that should be watched are—

- **Dye selection**
- **Wetting out**
- **Dye dispersion**
- **Retarding agents**
- **Dyeing method**
- **Reduction and oxidation**

These Tips Will Help VAT DYEING on Packages

By **ERNEST L. CASWELL,** Ciba Co., Inc.

THE DYER'S FIRST QUESTION should be "Is this dye the most satisfactory for the purpose?" If it is satisfactory, the dye must be clean and well dispersed, have good level-dyeing properties, should check with each successive dyeing, and should have the same working properties as the other dyes in the combination.

Laboratory tests that will aid in choosing dyes are easy to perform and well worth while.

Reduced Filter Test

Weigh out and disperse 1 to 5 gms. of dye. Reduce with the correct amount of caustic, hydrosulfite, and water. Temperature and time must be correct also.

Dissolve in a wash bottle containing 500 cc. of water (at the dyeing temperature), 5 gms. of caustic, and 5 gms. of hydrosulfite.

In a beaker containing 400 cc. of water (at the dyeing temperature), add 100 cc. from the wash bottle and one-fifth of the reduced dye.

This solution is then filtered through a Buchner funnel with a 15-cm. Whatman No. 3 paper. During the filtering process the paper is washed with the balance (400 cc.) of the caustic and hydro solution from the wash bottle. Keep at all times at least ¼ in. of liquor over the filter paper to prevent premature oxidation. After the filtering is complete, the filter is then washed and the residue oxidized with perborate.

Visual estimation of the amount of dirt or other foreign matter on the filter paper gives the dyer an indication of what to expect on the outside or core of his packages or beams.

Pigment Filter Test

The pigment filter test is less complicated:

Disperse 0.50 to 1.00 gm. of double paste (or equivalent) in 100 to 300 cc. of water at the dyeing temperature for 30 mins.; then filter through a 15-cm. Whatman No. 3 filter paper. The filter paper is then dried and examined.

This pigment test gives the laboratory a control picture of the particle size and dispersion of the dye for the pigment-dyeing method. While a dye may be suitable for the reduced method, it may not be satisfactory for pigment dyeing. But if the amount of dirt or other foreign matter is too great for the reduced method, it is also detrimental in pigment dyeing, no matter how well the dye may be dispersed.

The control laboratory must understand that all dyes will show some impurities on the filter paper. The other requirements can be determined best by plant laboratory tests.

A dyer who has only a limited knowledge of vats should hold to the pigment-dyeing method. Most of the vats can be successfully dyed by this method. Many dyers, however, still lean to the reduced method for heavy shades. In some cases, a better color yield and cleaner dyeing may be obtained by the reduced method. To obtain a good reduced dyeing, it is necessary to know the correct amount of caustic, hydrosulfite, and water, plus the optimum reduction temperature and time. The reduced method on heavy shades, when the correct ratios of caustic and hydrosulfite are used, generally eliminates the need of salt. A minimum of salt should be used when anthraquinone vat dyes are being used.

Wetting Out Can Be Critical

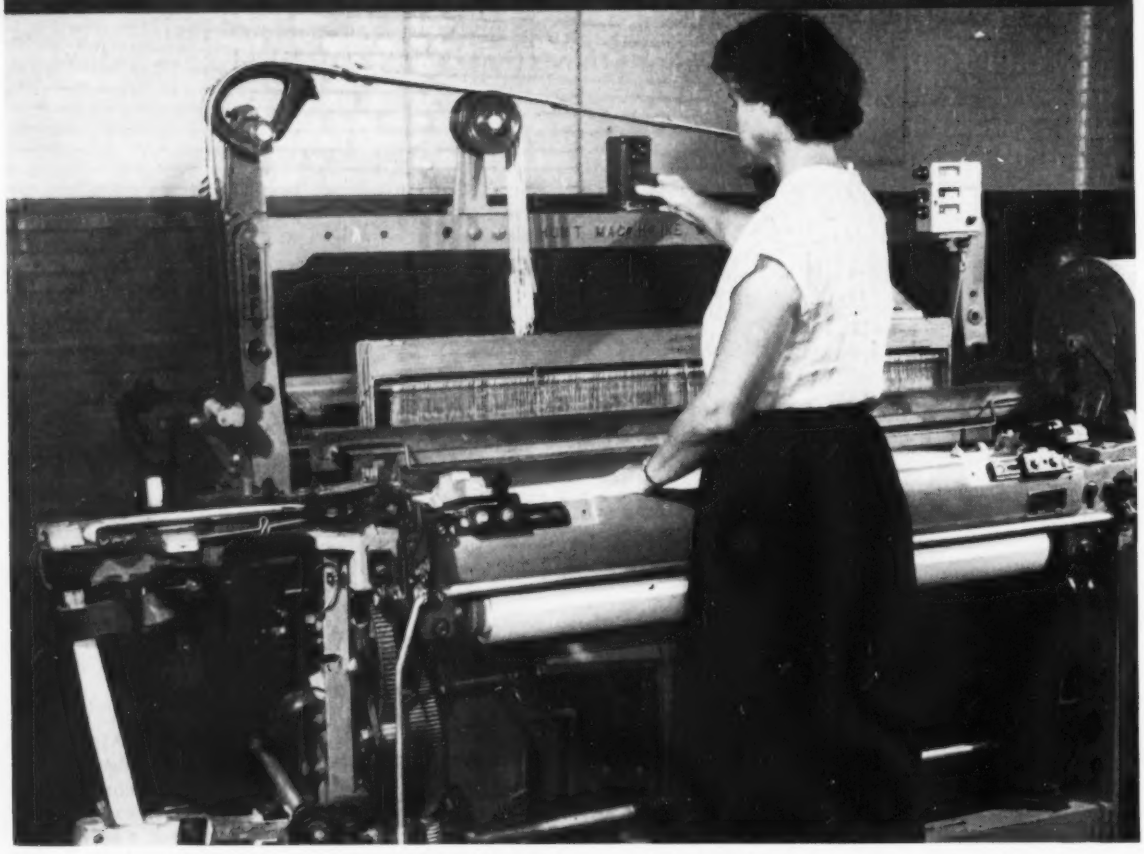
Various procedures are used in preparing the yarn for dyeing. Among them are use of wetting agents (such as sulfonated fatty esters) at various temperatures. Plain water, caustic soda, soda ash, and acetic acid have found advocates.

Serious consideration must be given to the selection of the wetting agent. Wetting agents and dispersing agents must be compatible. The wetting agent may tend to coagulate or enlarge the particle size of the dye and cause it to precipitate during the pigmentation. This, of course, will result in

(*Continued on page 192*)

Adapted from a paper presented recently at a meeting of AATCC, South Central Section.

A TEXTILE EQUIPMENT NEWS FEATURE



PUSH-BUTTON STARTING is demonstrated by Hattie Robbins, Borden weaver. This H-B-3 loom had run for seven weeks without being manually cleaned.

Here's the New H-B LOOM At Borden Mills

Borden Mills management men believe the new looms they are installing in an environment of ideal weaving conditions are going to erase some of their major cloth-weaving problems. Loom features are—

- **An electric clutch and brake start and stop the loom**
- **No oil is used for lubrication**
- **Grease is used only in sealed antifriction bearings**
- **Nylon gears and rolls and oil-impregnated bushings are used**

By RICHARD B. PRESSLEY, Assistant Editor, TEXTILE WORLD

NEW LOOMS involving principles of operation not used before in weave-room production are on the floor weaving cloth at Borden Mills, Inc., Kingsport, Tenn.

The new H-B-3 looms—many of the features were suggested by Borden Mills—are designed and manufactured by Hunt Loom & Machine Co., Greenville, S. C.

As fast as the new looms are manufactured, they will be weaving cotton cloths at Borden. There will be a total of 350 H-B-3 looms. The material now being woven is 80 square.

Looms Start and Stop With Push-Button Control

The loom has a new electric clutch and brake manufactured by Warner Electric Brake & Clutch Co.

The clutch and brake are on opposite ends of the loom, and each is a complete self-controlled motion except that they act simultaneously.

Both are controlled from a central unit and from a push-button control switch.

The central unit is located directly below a 1-hp. conventional loom motor.

The unit is connected to the 550-v. current by a plug that is pushed manually into an electric outlet near the motor.

The central unit contains a transformer to reduce the 550-v. current to 10 v. Both the clutch and brake are operated by the 10-v. current. The warp stop motion, filling stop motion, and protector motion are operated by the 10-v. line current. This same line connects them to the clutch and brake.

The push-button control switch is located in the center of the front arch of the loom. The loom stops automatically when a warp end or the filling breaks and can be stopped manually by pushing the Stop button on the switch.

The loom does not have a shipper lever or any shipper-lever parts.

All stop-motion mechanical parts have also been eliminated from the loom. When a warp end breaks, the loom stops with the harnesses level so that weavers can draw in ends without moving the lay. The loom stops consistently at warp-end breaks with the lay within 1 in. of a given position.

At warp-end breaks, the clutch and brake operate electrically.

The filling stop motion is also connected to the clutch and brake. The side-fork stop motion is used on the looms at Borden, and the lay is positioned at back center on filling-break stops. A weaver can start up a loom at filling breaks without positioning the lay.

At slam-offs, the moving frog contacts an electric switch and stops the loom.

While the loom is stopped, unattended, the brake is constantly electrified. The power consumed by the brake is about equivalent to that of a 30-w. lamp bulb.

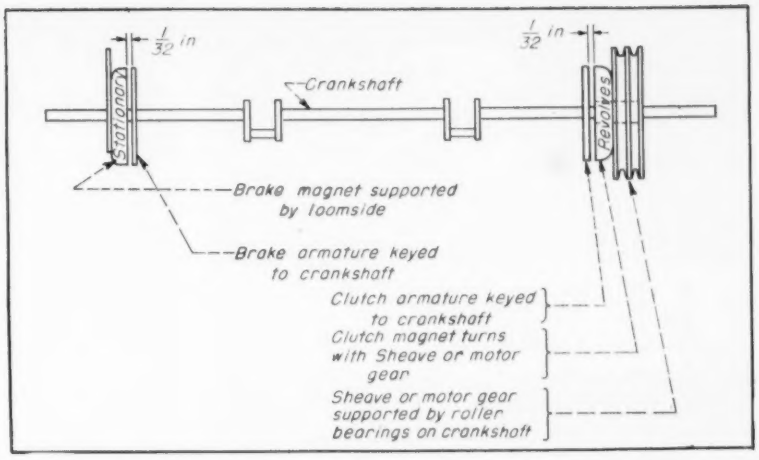
Finger-Tip Movement Positions the Lay

When it is necessary to move the lay backward on stopped looms, the push-button switch is set at a neutral position and the brakes stop operating.

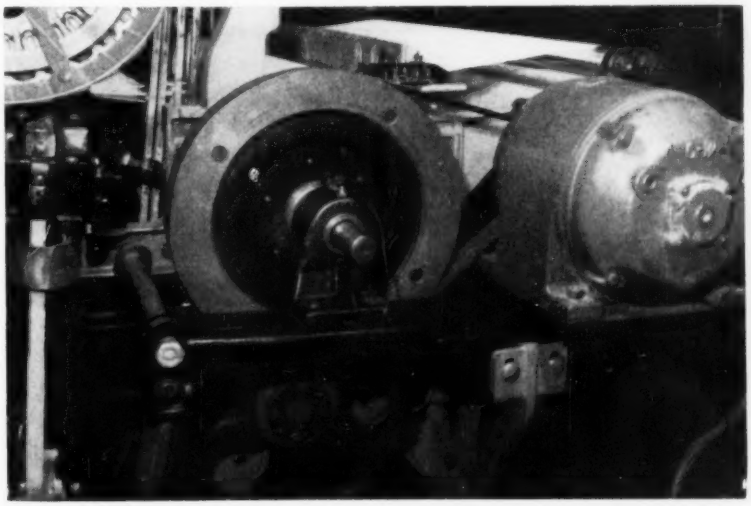
To move the lay forward or turn the lay over one pick at a time, the switch is set at the "inch" position; and the lay is positioned with the push button.

When a weaver restarts a loom, he simply presses the push button.

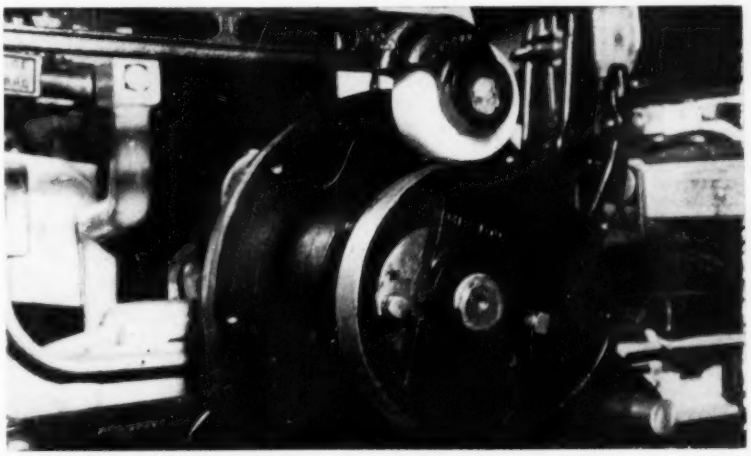
A large sheave driven by three V-belts turns on the loom crankshaft and replaces the conventional motor


1/32 in
1/32 in
Stationary
Crankshaft
Revolves
Brake magnet supported by loomside
Brake armature keyed to crankshaft
Clutch armature keyed to crankshaft
Clutch magnet turns with Sheave or motor gear
Sheave or motor gear supported by roller bearings on crankshaft

THE CLUTCH MAGNET is energized (starting torque) to start the loom. At the same time energy (retarding torque) is removed from the brake magnet.

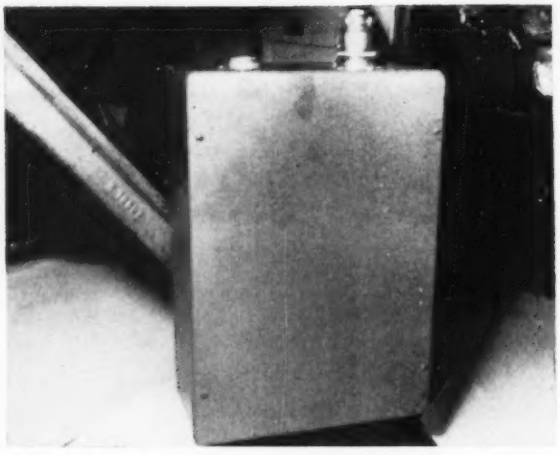


THE WARNER DRIVE is located in the normal clutch position. Three V-belts attached to sheaves on a 1-hp. motor drive a large sheave that replaces the common motor gear.

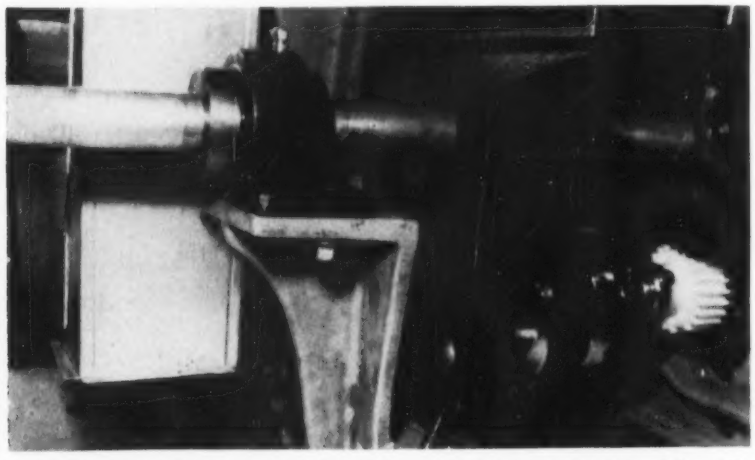


THE WARNER BRAKE is located on the opposite end of the loom from the drive. Both operate simultaneously from the same central unit within 1/400 sec.

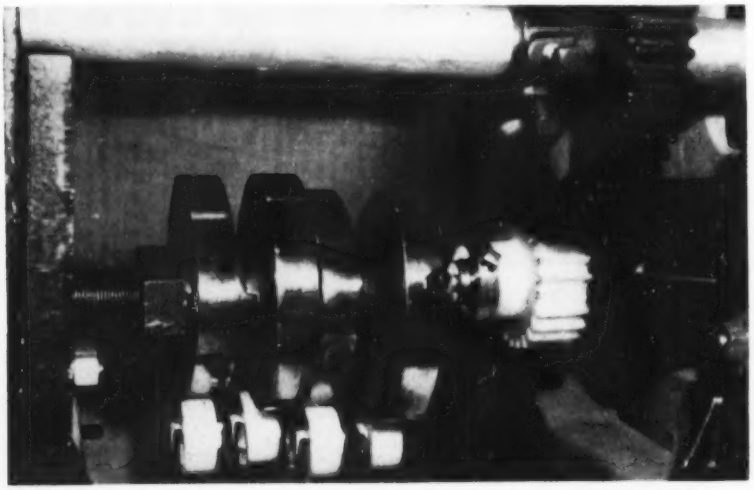
FINGER-TIP CONTROL at the switch permits the weaver to turn the lay over one pick at a time or "inch" the lay forward to any position desired.



THIS CENTRAL UNIT contains all controls for both the drive and brake. To replace the unit, the loomfixer simply removes the plug from the starter switch.



ANTIFRICTION SEALED-IN BEARINGS in the camshaft help reduce friction. Other roller and ball bearings throughout the main shafting will be greased only once each year.



NYLON TREADLE ROLLS move against cadmium-plated harness cams. The auxiliary gear is also machined from nylon and polished.

gear. A plate, similar in appearance to that of the common driving-clutch disk, is connected to the inside (toward the loomside) of the disk and encloses an electric magnet.

Another disk, a thin one, is keyed to the crankshaft just inside the large disk. This disk is the armature.

When the magnet in the large disk is energized, the thin disk keyed to the crankshaft "freezes" to the plate and the loom starts.

As long as the magnet remains energized, the loom continues to run. To stop the loom, the electricity is shut off.

The motor and electric clutch are on the battery end of the loom and are located in the position of conventional drives.

The Electric Brake Operates in 1/400 Sec.

The electric brake is on the opposite end of the loom and operates in much the same manner as the electric clutch. The only difference is that electricity is not used in the magnet when the loom is running but is applied to stop the loom.

The brake consists of a thin disk keyed to the crankshaft. This is the brake armature. A brake magnet is supported by the loomside 3/32 in. away from the armature.

When the brake magnet is electrified, the electricity in the clutch magnet is shut off simultaneously and the loom stops.

The stopping action requires only 1/400 sec.

Little maintenance on the electric clutch and brake is expected at Borden. An experimental-model loom, equipped with the clutch and brake, has been operated with an automatic

stop-and-start attachment and a counter for 176,740 stops at the mill with no detectable wear.

If a central-control unit should fail, the loomfixer on the section will remove the unit, plug another one in the outlet, and restart the loom. Borden expects to keep three extra units on hand for the 350 looms being installed.

Removed units will be reconditioned outside the weave room, probably by the manufacturer.

No Oil and Little Grease Will Be Used on the Looms

The loom itself is constructed to require no machine oil and only infrequent greasing of sealed antifriction bearings. One-year greasing of the sealed bearings is the planned schedule.

No grease or oil will be used on the let-off (Bartlett), take-up gears, or any moving part of the loom motions.

The take-up-gear train has a nylon gear next to each metal gear so that no two metal gears contact each other. Nylon gears in the take-up-gear train are the take-up roll gear, change gear, intermediate-gear pinion, and clutch pinion gear.

The drive gear on the crankshaft and the idler gear between the auxiliary gear and the camshaft are also made of machined and polished nylon.

Nylon rolls are used throughout the loom—whip-roll cam-follower roll, treadle rolls, and the pick balls, for example.

The harness cams, pick-cam toes, pick-cam rims, and all surfaces that touch nylon rolls are ground and cadmium or chromium plated to prevent wear to the nylon parts.

All exposed parts not painted (such as the handrail and bobbin disk) are also cadmium or chromium plated.

Antifriction sealed-in bearings—in most applications roller bearings—are used throughout the main shafting.

The crankshaft bearings in each of the loomsides are Hyatt roller bearings. The front crank-arm bearings at the lay are roller bearings.

The camshaft has roller bearings at the loomsides and also at the two center bearings at the spreaders.

The rocker shaft is equipped with roller bearings at the loomsides.

Roller bearings are also used in the stand for the auxiliary cams.

SKF antifriction bearings are used in the loom drive and also in the outboard bearings of the auxiliary shaft.

Special split ball bearings manufactured by Split Ballbearing Corp. are used in the crank arms at the crankshaft and also for the two inboard bearings just inside the crank arms.

All moving parts of the loom motions are equipped with removable bushings or bearing surfaces of oil-impregnated materials that do not require oil.

Humidity Is Pulled Through the Warp Yarns

Another important feature of the loom installation at Borden is the humidity-irregularity minimizer. Each loom is equipped with a duct open at the top and running lengthwise under the full length of the drop wires. This duct is connected by two vertical ducts to a duct imbedded in the floor that connects all looms and extends to a vacuum unit at the Bahnson refrigerated-air-conditioning central-control station.

The humidity in the weave room is drawn through the warp at the drop wires—where Borden believes it is most needed—into the duct. The moist air is filtered and recirculated into the weave room from the central air-conditioning station.

Looms on the floor now are running efficiently with the weave-room humidity at only 62%.

There's another great advantage to the vacuum duct: the drop wires and immediate surrounding area are kept perfectly free of accumulated lint.

Warp sizing for the new looms is carried on conventionally with this formula:

180 lbs.	thin-boiling, 40-fluidity corn starch
15 lbs.	Texize 115 binder
5 lbs.	Texize 100 tallow
2 lbs.	Texize wax

The mix finishes at 181.5 gals. after being brought to the boil in 30 mins. and held at 212° F. for 1 hr. 15 mins. Size-box temperature is 206 to 208° F. The system is the circulating type with a size-level control.

An American Monorail overhead cleaner blows the waste off the looms; and since there is no oil or grease on the loom surface at any point, the looms remain clean.

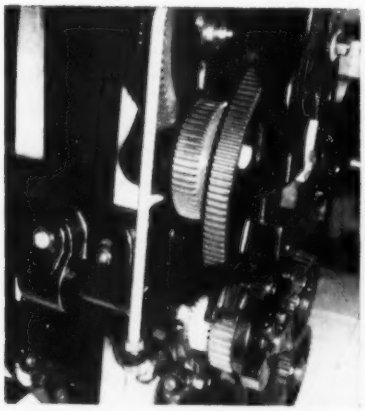
Veeder-Root pick clocks equipped for adding the fourth shift are used on the looms.

Why Borden Mills Picked These Looms

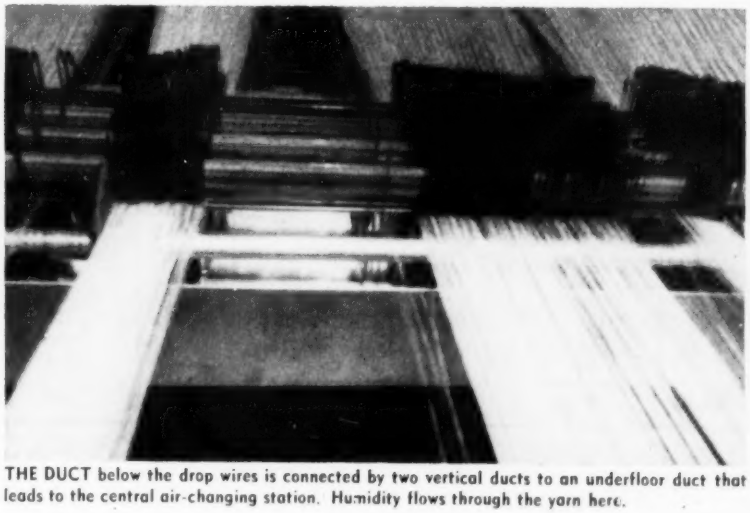
The reasons Borden Mills officials selected these looms and this equipment are:

1. To have a loom that does not require constant adjustment and re-

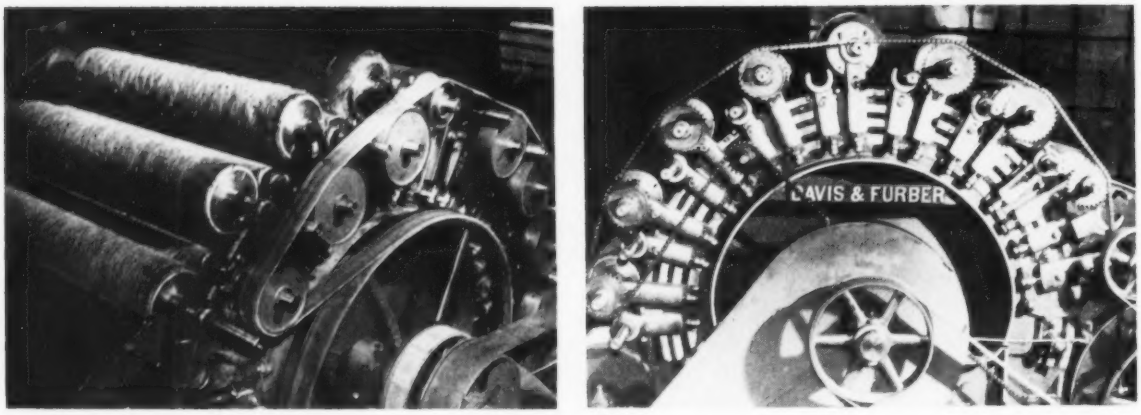
(Continued on page 238)



THE TAKE-UP GEAR TRAIN is made from polished nylon and steel gears. A nylon gear separates the steel gears so that no two steel gears are together.



THE DUCT below the drop wires is connected by two vertical ducts to an underfloor duct that leads to the central air-changing station. Humidity flows through the yarn here.



EXTRA FANCY goes on the breaker cylinder in place of the fifth worker and stripper. The fancy is driven by the stripper belt and leads the cylinder by 20% in surface speed. Setting of the new fancy has to be determined for each type of stock. The new roll lifts up the fibers so that the following workers and strippers have more fibers to act on.

Extra Fancy on WOOLEN CARD *Increases Carding Action 60%*

► Replacing the fifth worker and stripper on the breaker cylinder with a fancy gives the remaining workers and strippers a better chance to do their job. In addition to increased carding action, the extra fancy gives better blending and improved evenness.

By W. HODGSON

TESTS MADE OVER THE PAST three years with an additional fancy on the breaker cylinder of a three-section woolen card have shown the following advantages:

1. Up to 60% increase in carding power on the breaking cylinder
2. Improved blending of the stock
3. Better evenness of the intermediate-feed sliver

The card used for the tests was a 40-in. three-cylinder, Davis & Furber card with No. 25 garnett breast, breaker cylinder, center-draw broad-band intermediate feed, intermediate and finisher cylinders, and an 80-end tape condenser.

Test Basis

Our initial tests on the breaker cylinder showed that the amount of stock being actively carded at any time fell progressively from the first

(*Continued on page 266*)

Worker	50% 64s colored laps 50% scoured Australian lambs				70% 64s colored laps 25% Vicara 5% rayon staple			
	With no 5th worker		With the extra fancy		With no 5th worker		With the extra fancy	
	Weight of fibers on worker (grains)	Percent	Weight of fibers on worker (grains)	Percent	Weight of fibers on worker (grains)	Percent	Weight of fiber on worker (grains)	Percent
1	134.5	100.0	132.5	100	270	100.0	250	100.0
2	105	78.0	102	77	136	50.5	116	46.4
3	98	72.8	97	73	127	47.0	103	41.2
4	94	69.8	85	64	110	40.6	92	36.8
5	Removed	—	Fancy in use	—	Removed	—	Fancy in use	—
6	114	84.7	407	307	125	46.6	460	184.0
7	90	66.9	187	141	100	37.0	211	84.4
8	92	68.4	148	112	102	38.0	155	62.0
Total wt.	727.5 =	100%	1,158.5 =	159%	970 =	100%	1,387 =	143%

FIBERS ON EACH WORKER were carefully hand-carded off and weighed. Total of fibers being actively carded was higher with the extra fancy in place. The author assumes that the variation in worker load at the sixth worker (when there was no fifth roll in place) does not affect the validity of the findings.

Equation Estimates YARN STRENGTH From Cotton-Fiber Properties

▶ A Texas research group developed an equation for estimating the strength of 22s cotton yarn from fiber properties. This equation is based on the settings and methods used in the Texas laboratory, but you can use it by setting up a ratio based on the strength of your 22s yarn.

By E. H. HELLIWELL
Contributing Editor, TEXTILE WORLD

A METHOD OF ESTIMATING the skein strength of yarn from the fiber properties of the cotton was presented in Research Report No. 17, Cotton Research Committee of Texas, Box 1645, Austin, Texas. Estimates of the potential skein strength of 22s yarn are derived from this formula (based on the settings and operating methods used in the Texas laboratory):

Upper-half mean x 123.78 = A
Tensile strength of fibers (1,000) x 0.73 = B
Fineness (Micronaire) x −1.75 = C
1.00 (constant) x −82.27 = D
Estimated strength of 22s yarn = A + B + C + D
(C & D are negative values)

Here is an example calculated from the formula:
Upper-half mean 1.06 x 123.78 = 131.21 = A
Tensile strength (1,000) = 83.00 x 0.73 = 60.59 = B
Fineness (Micronaire) = 4.10 x −1.75 = −7.18 = C
Constant = 1.00 x −82.27 = −82.27 = D
Estimated strength of 22s yarn = 131.21 + 60.59 −7.18 −82.27 = 102.351 lbs.

This estimate of yarn strength is accurate to a standard error of 4.5 lbs., which is within the limits of present-day mill equipment.

How To Estimate Strength Of 22s Yarn in Your Mill

Although the direct equation can be used only for mills using the same setting and methods used at the Texas laboratory, the equation can be used as the basis for estimating the skein strength of 22s made in your own mill from cotton with different properties from your present cotton.

This estimate is figured by setting up a ratio: the strength of your new yarn is to the strength of your present yarn as the estimated strength of your new yarn (Texas equation) is to the estimated strength of your present yarn (Texas equation).

Based on Research Report No. 17, "Fiber Properties of Cotton from the Coastal Bend of Texas, Crop of 1952," Cotton Merchandising Research, Austin, Texas.

Normal Range of Fiber Properties of Coastal Bend Cottons

Variety	Upper-half mean length (ins.)	Tensile strength (1,000 lbs.)	Fineness (Micronaire)
Deltapine	1.02 to 1.09	76 to 80	3.8 to 4.3
Stoneville	0.92 to 1.09	81 to 86	3.5 to 4.1
Delfos	0.98 to 1.06	79 to 84	3.6 to 4.0
Lankart	0.98 to 1.06	75 to 80	3.9 to 4.5
Northern Star	0.96 to 1.04	75 to 83	3.8 to 4.6

Here are applications of this method:

1. A mill is making 22s with a skein breaking strength of 94 lbs. The cotton has an upper-half mean of 1.04, a tensile strength of 79,000 lbs., and a fineness of 4.0 Micronaire units. What skein strength could the mill expect from a cotton with an upper-half mean of 1.06, a tensile strength of 83,000 lbs., and a fineness of 4.1?

From the Texas equation, the strength of yarn from the present cotton should be 97.2 lbs. and the strength of the proposed yarn should be 102.4.

So the ratio would be:

$$\frac{94}{X} = \frac{97.2}{102.4}$$

$$X = \frac{94 \times 102.4}{97.2}$$

$$X = 99.1 \text{ lbs.}$$

So the expected skein strength of the 22s yarn would be 99.1 lbs.

2. This same mill wants to make a weaker yarn. It is considering the use of cotton with an upper-half mean of 0.97, a tensile strength of 80,000 lbs., and a fineness of 4.3. What yarn strength should be expected from this shorter cotton?

$$\frac{94}{X} = \frac{97.2}{93.1}$$

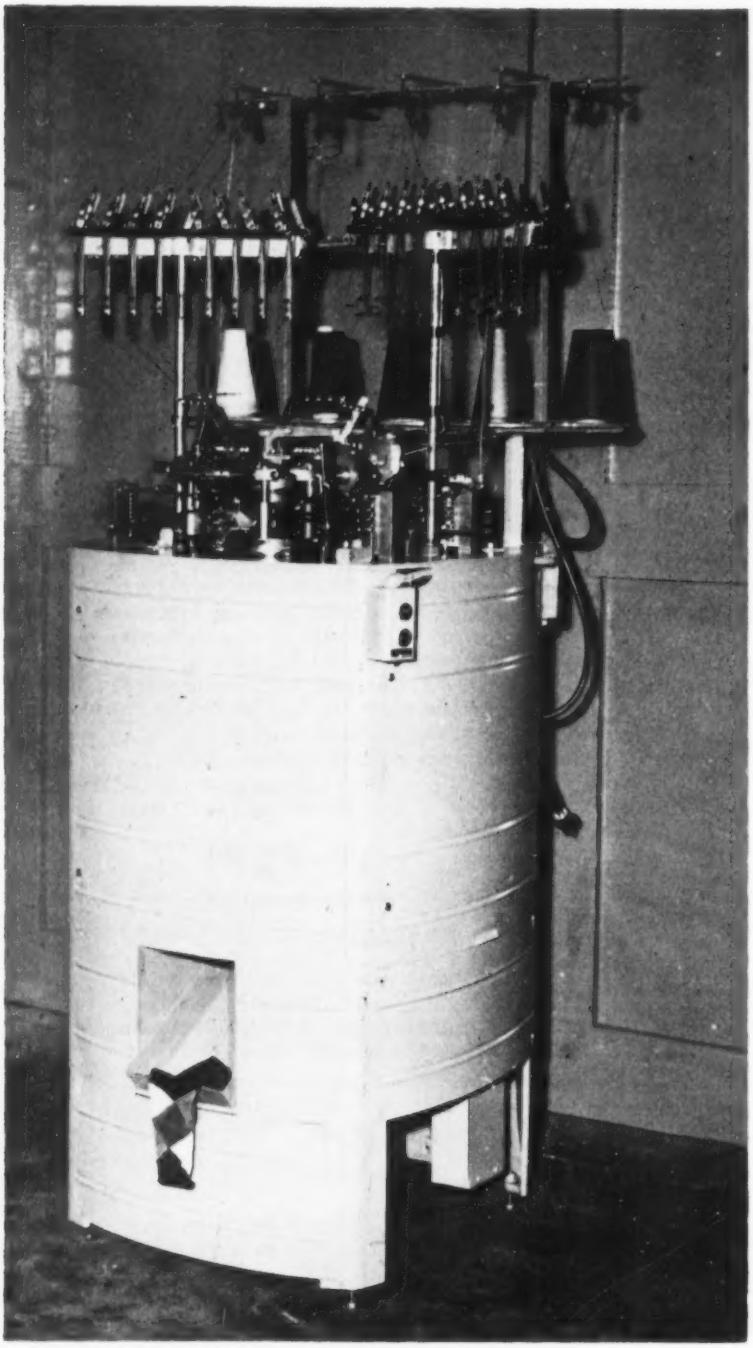
$$X = \frac{94 \times 93.1}{97.2}$$

$$X = 90 \text{ lbs.}$$

So the mill could expect a skein strength of 90 lbs. from this new cotton.

A TEXTILE EQUIPMENT

New HOSIERY MACHINE Highlights



NO PULLEYS project from the built-in frame. The individual motor drive allows machines to be moved easily to suit operator workloads.

▶ High production of fine, medium, or coarse goods can be obtained from a new circular-hosiery machine just announced

▶ Elimination of troublesome parts and use of four-feed knitting speed up production on highly styled hosiery. Surprising versatility is possible by the use of a five-step jack cylinder

▶ Other unconventional features include—

- Improved sutures in pattern
- No switch cams
- Centrally displaced cylinder
- No pickers or droppers
- No raise cams
- Individual drive

A NEW CIRCULAR-HOSIERY MACHINE built by B. Frank Coile, Keller Machine Co., Athens, Ga., is a radical departure from conventional hosiery-machine construction. Its many features have been aimed particularly at the high production of argyle socks. Three and one-half dozen 168-needle argyles have been knitted in 8 hrs. Its pattern scope, however, covers a range of hosiery styles much wider than argyles.

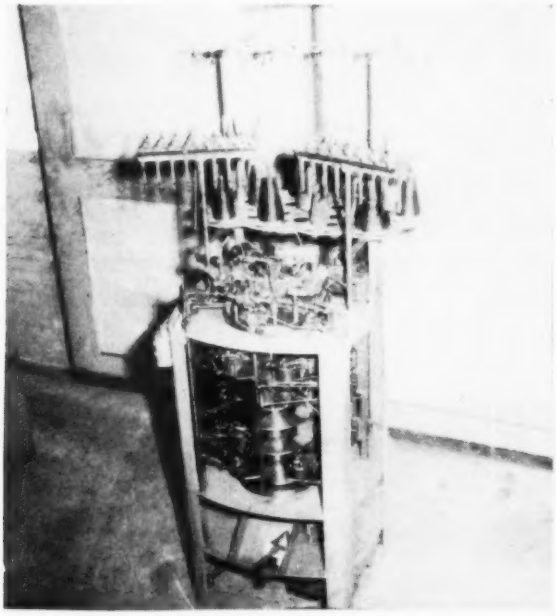
Although a pattern area of 130 steps by 100 racks is possible, the pattern mechanism is not complicated. Use of a tall cylinder keeps the knitting head of the machine neat and accessible.

Five Jack Cylinders Control the Needles

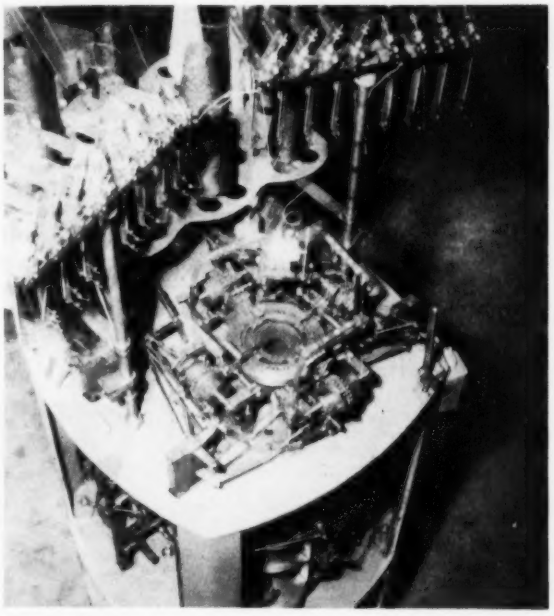
Below the needle cylinder are five jack cylinders arranged one above the other with their slots in alignment. The slots in the cylinders are lined up on a sleeve by means of an eccentric screw in each cylinder that

NEWS FEATURE

Versatility, Quality, Production



NEEDLE CYLINDER occupies a central position in the machine frame. Pattern units are arranged to operate at five levels on the 130-step jack cylinder.



SINKER-CAM RING is locked in position. Needles and fabric are easily accessible. The stop motion is controlled from the bar above the take-up springs.

turns against the key on the sleeve.

Two drums below the front feed point control the needles during the knitting of the heel and toe. Needle pickers or lifters are not used, and there is no switch or raising cam.

An arrangement of adjustable platforms allows up to four design drums to work on each lower jack cylinder. The design drums can be quickly secured to the platform, and extra drums can be added to the machine at any time.

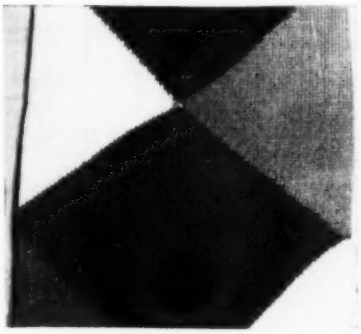
Eight design drums are most desirable for knitting an argyle sock; and to provide ample working space, these eight drums may be fitted to the lower four platform levels.

Each design unit, composed of a drum and its selectors, is identical and can be lifted from the machine to change the pattern.

A pattern jack that is selected by a drum on its level pushes up the jack above it, which in turn raises the master jack. The pattern jack is raised slightly to raise the master jack over a jack-raising cam to lift the needles about ⅛ in.

Raising the needles by jacks instead of by a raising cam causes less needle breakage because the needle butts have no cam points or picks to crash into.

The cam track is enclosed except for four small gaps between the feeds where needles can be extracted. Enclosure of the needles means better needle control and stitch construction.



CLEAR-CUT JOINS between the colors are made by sending the first selected needle to its tuck position at each oscillation of the cylinder.

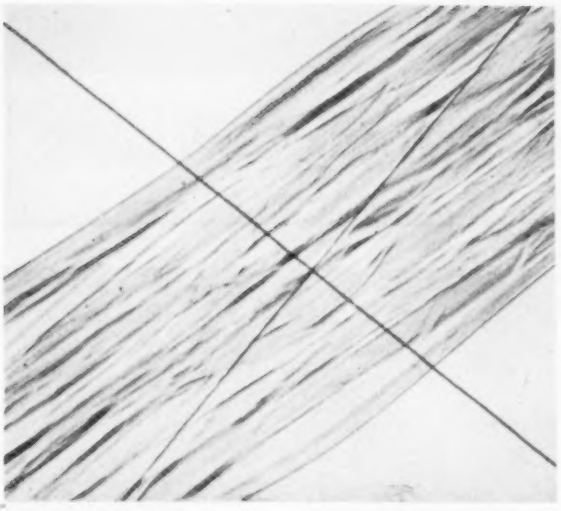
Production Is Increased By Short Oscillation

Since raising cams are not used, a smaller oscillation is necessary to get the needle butts clear of the stitch cams. A smaller oscillation and the absence of pickers makes it possible to increase cylinder speeds during patterning and heel-and-toe knitting.

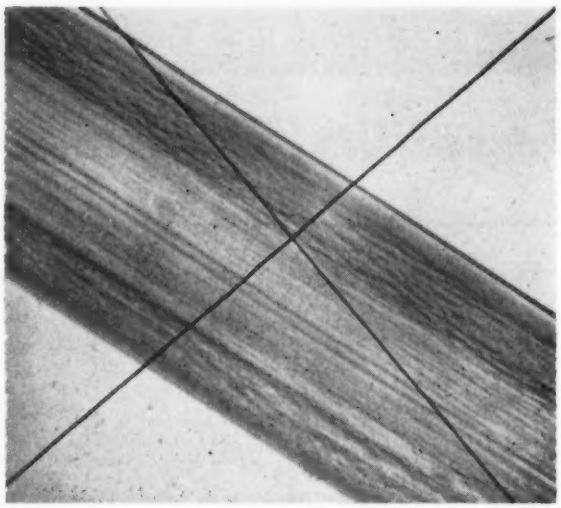
The cylinder oscillates and knits circular at the same speed to make higher production possible and to eliminate the necessity for speed gears. Argyle socks with rubber tops have been knitted at a rate of more than 3½ doz. per 8-hr. shift on 168-needle machines.

Of particular interest to the small manufacturer is the interchangeable cylinder size and gauge. A 168-needle

(Continued on page 226)



BRITTLE YARN, not suitable for tire cord, shows a breaking up of the filament into fibrils under tension. (Crossed lines are in the microscope.)

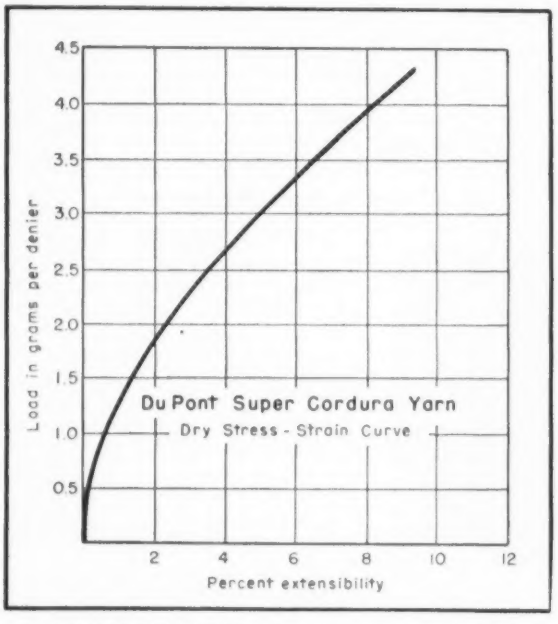


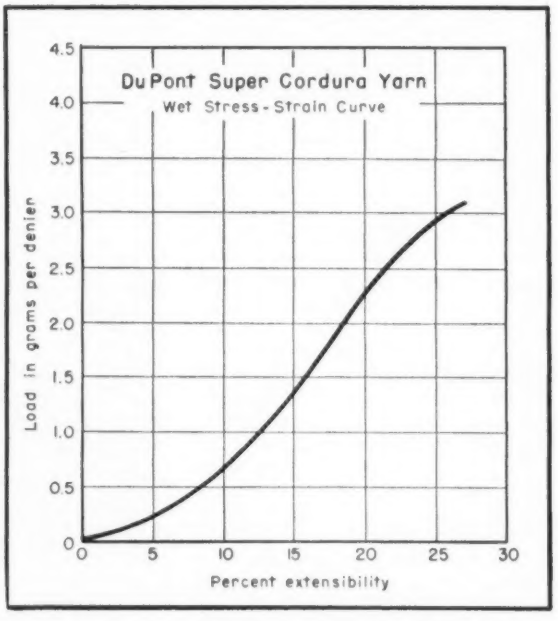
NEW YARN, even after crushing, shows no breaking up under tension. The smooth, regular profile indicates resilience and toughness.

New, Stronger TIRE RAYON *Is Safer, More Durable*

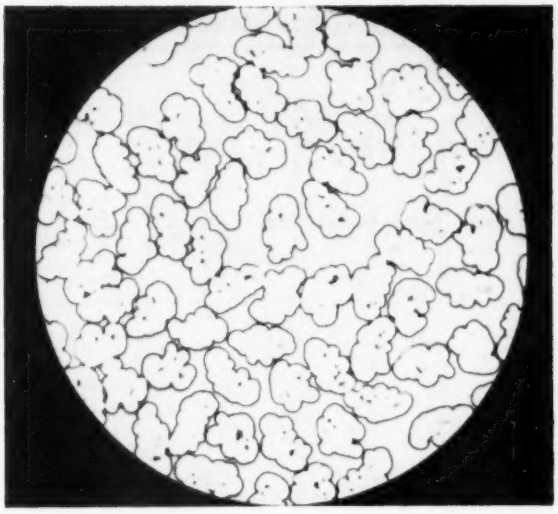
► Eight years of applied research and evaluation have created Du Pont's new Super Cordura

► Here's the reason, in pictures and theory, for the better performance claimed for the fiber

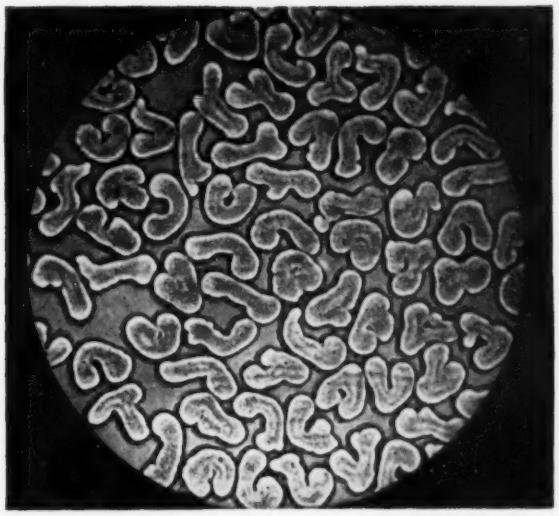




THE STRESS-STRAIN CURVE of Super Cordura shows a high level of strength. Another strength factor, not shown, is a higher than usual wet strength and lower swelling when wet than other high-tenacity rayons.



TYPICAL TIRE RAYON has a crenulated surface and a definite delineation between skin and core.



NEW YARN has a smooth contour. A dyed cross section shows that it is an all-skin fiber with no soft core.

IN THE DEVELOPMENT OF a new tire yarn, strength is the first consideration. Super Cordura meets the high-strength criterion: it is 20% stronger than ordinary high-tenacity tire rayon and will add strength and toughness to automobile and truck tires.

Fatigue resistance, cost, and other factors were considered by Du Pont and served as a basis for evaluation of a great number of experimental yarns over an eight-year period.

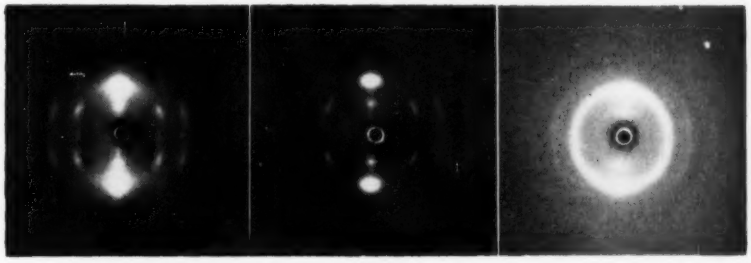
Analysis of a number of the better experimental fibers showed a definite relation between crystallinity, orientation, skin-core structure, and the more obvious physical properties of strength and fatigue resistance.

X-ray and microscope studies showed that a balance of high orientation with moderate crystallinity yields a yarn of optimum properties. To produce such a yarn required a complete revision of the manufacturing techniques.

A comparison of ordinary rayon with the new Super Cordura is shown in the accompanying illustrations.

Super Cordura's increased resistance to moisture is noteworthy. This improvement can be seen in the higher ratio of wet to dry tenacity. Super Cordura swells only 65 to 70% in filament cross section, whereas conventional tire rayon swells over 90%. Greater resistance to tire failure caused by exposure to moisture is the result. Manufacturing operations involving drying are substantially benefited.

Super Cordura high-tenacity yarn has a high level of strength and other useful properties as well. (See table at right.)



CORDURA 258 | FIBER G RAYON | T-5 TEXTILE RAYON

ORIENTATION AND CRYSTALLITE SIZE are important factors in tire cord. High orientation is indicated by narrowness of the vertical spots in the X-ray diffraction diagram. Large crystallites show up in sharply defined spots.

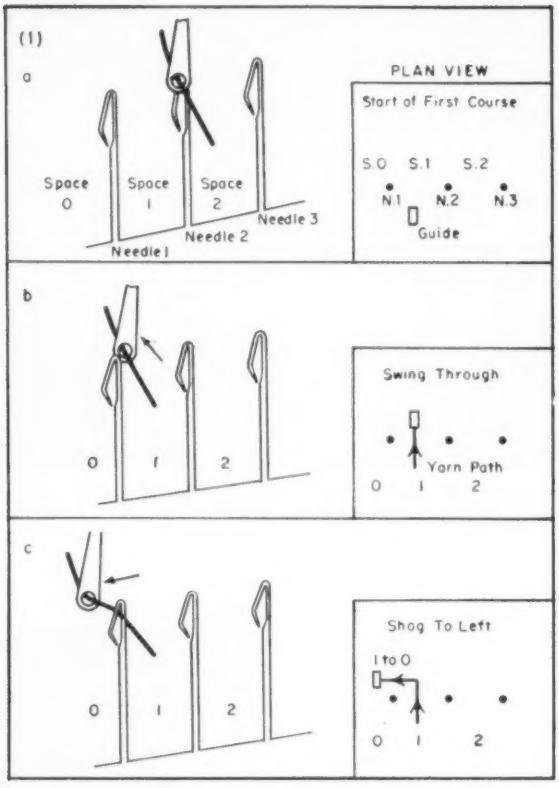
Properties of Super Cordura and Other High-Tenacity Rayons

	Super Cordura	Current High-tenacity rayons
YARN— 1650 Den.		
Tenacity		
Cond. (gms. per den.)	4.40	3.5 to 3.9
Wet (gms. per den.)	3.05	2.0 to 2.5
Loop (gms. per den.)	3.30	2.5 to 3.0
Ratio, wet/cond. tenacity	0.69	0.56 to 0.63
CORD— 1650/2 11Z/11S Twist		
Tenacity		
Cond. (gms. per den.)	3.40	2.6 to 2.9
Oven—dry (gms. per den.)	3.75	3.2 to 3.3
Ratio, O. D./cond. tenacity	1.10	1.14 to 1.24

Seven Rules for Successful TRICOT DESIGNS

✓ Novelty tricot fabrics are made by experimentation, by accident, or by working out the design on point paper. The latter method saves hours of work, broken needles, and machine time.

✓ Successful designs depend on the knowledge and imagination of the designer, but here are seven rules that will help you to produce your own tricot novelties.



ONLY OVERLAPS need be shown in the pattern-wheel notation. Swinging the guide over the needle beard produces an overlap. This

By JAMES H. BLORE
Assistant Editor, TEXTILE WORLD

THERE IS A STRONG TREND among tricot knitters toward fabrics other than jersey. A lot of experimenting is being done on women's dress-goods fabrics, for example. Tricot knitters who hope to expand their markets will be engaged in intensive design experimentation in an effort to come up with style fabrics acceptable in the market.

Outlined here are the basic stitches used in tricot knitting and how they can be combined to produce different cloths. Knowledge of these stitches and combinations can save you time and mistakes.

Many mill men are puzzled by the hieroglyphics of the tricot designer and how they are translated into pattern-wheel notations. Here is an explanation of the simple 1-0, 1-2, stitch.

How 1-0, 1-2, Stitch Is Made

Each guide bar has four distinct movements during the knitting of one row of stitches. The backward and forward movements are identical for every course and are unalterable during knitting. We can forget these movements and concentrate on the sidewise or shogging movements to produce different designs.

The first sidewise movement of the guide bar after the needles have swung through is a one-needle-space move to the left behind the needles. Where the pattern wheel is situated at the left of the guide bar, the needle space to the left is classified as No. 0. The guides have moved from Space No. 1 to Space No. 0, or from 1 to 0. This movement can be written down as 1-0.

The guide bar now swings forward and then moves sidewise to its original position opposite space No. 1. The yarn has now been lapped around the needle, and this lap is pulled through the old stitch as the needle falls and the beards are closed.

The guides swing back to commence the next course and move to the right one needle space to space No. 2. This movement produces the 1-2, lap. The guides then swing forward and move to their original position opposite space No. 1.

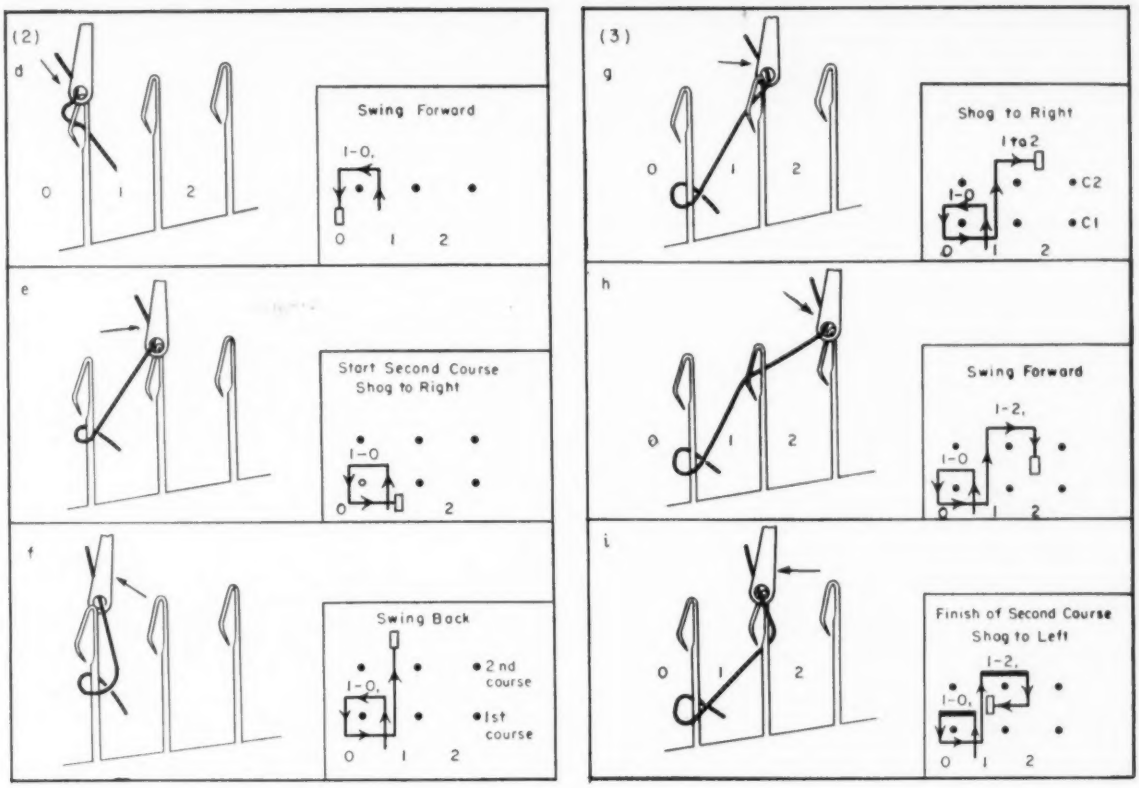
Tabulate Only Overlaps

The movements in front of the needles are known as underlaps, and the movements behind the needles are overlaps. While we are concerned with the underlaps, it is necessary to tabulate only the overlaps. In our 1-0, 1-2, fabric there are two overlaps and two underlaps. The overlaps are represented by a hyphen and the underlaps by a comma.

Point paper is used to trace the path of the guides during the knitting of a design, and the pattern-wheel steps are obtained from the point paper. The bottom row of horizontal dots represents the first course to be knitted, and the vertical rows of dots represent the same needle on subsequent courses.

It is important that the design be read in the correct sequence, especially where open laps and closed laps are used in the same design. A closed lap uses more yarn and gives a more stable construction than an open lap and is made by swinging the guides completely around the needle.

An open lap is produced by swing-



step-by-step diagram shows how the yarn is lapped around the needles to make the familiar 1-0, 1-2, stitch. Overlaps are represented by hyphens in the pattern-wheel notation.

ing the guides over only the beard side of the needle during the knitting of one course. Open laps are easier to knit than closed laps because they slide up and down the needle stem more freely. Single-bar fabrics made with open laps are not run-resistant. The 1-0, 1-2, stitch consists of closed laps while 0-1, 1-2, is an open lap.

Here Are the Seven Rules

In designing fancy tricot cloths these rules should be followed:

1. Make overlaps of one needle space only. It is possible to lap over two needles, but the fabrics made from two-needle overlaps are difficult to knit and major machine adjustments are generally necessary.

2. Keep underlaps down to four needle spaces. Long underlaps require slower machine speeds. Erratic movements of the guide bar on long underlaps can be reduced by using intermediate pattern-wheel steps.

3. Make sure that each needle receives an overlap at every course.

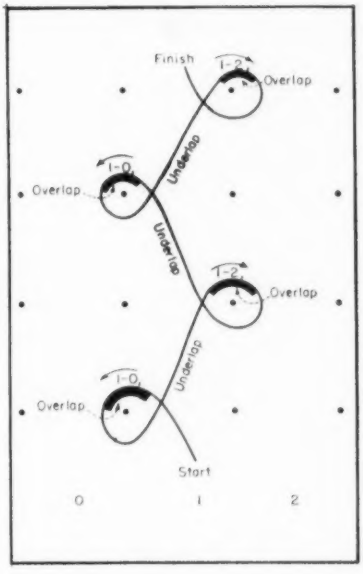
This rule is particularly important where fabrics are made with an irregular threading up of the guides. If a needle receives no thread during the lapping operation, the old stitch will be cast off the needle, there will be no new loop to retain the old stitch, and a fault will be made. To check this step on point paper it is necessary to show the lapping movement of all the threads in one repeat of the threading-up sequence.

4. Keep the design length to repeat over 4, 8, 12, 16, 24, 32, 48, or 96 steps. When drafting complicated designs that extend more than eight steps or four courses, rule a faint line on the point paper at courses 6, 8, 12, 16, 24, and 48.

A design extending over 24 courses will need 48 steps on the pattern wheel, and the ratio of the pattern-wheel speed to the camshaft speed will be 1:24.

5. The draft of the design must finish on the same needle space that it started on. It is a good plan to work backwards on complicated designs. Start the design from the bottom, complete the last few courses, and join the design in the center.

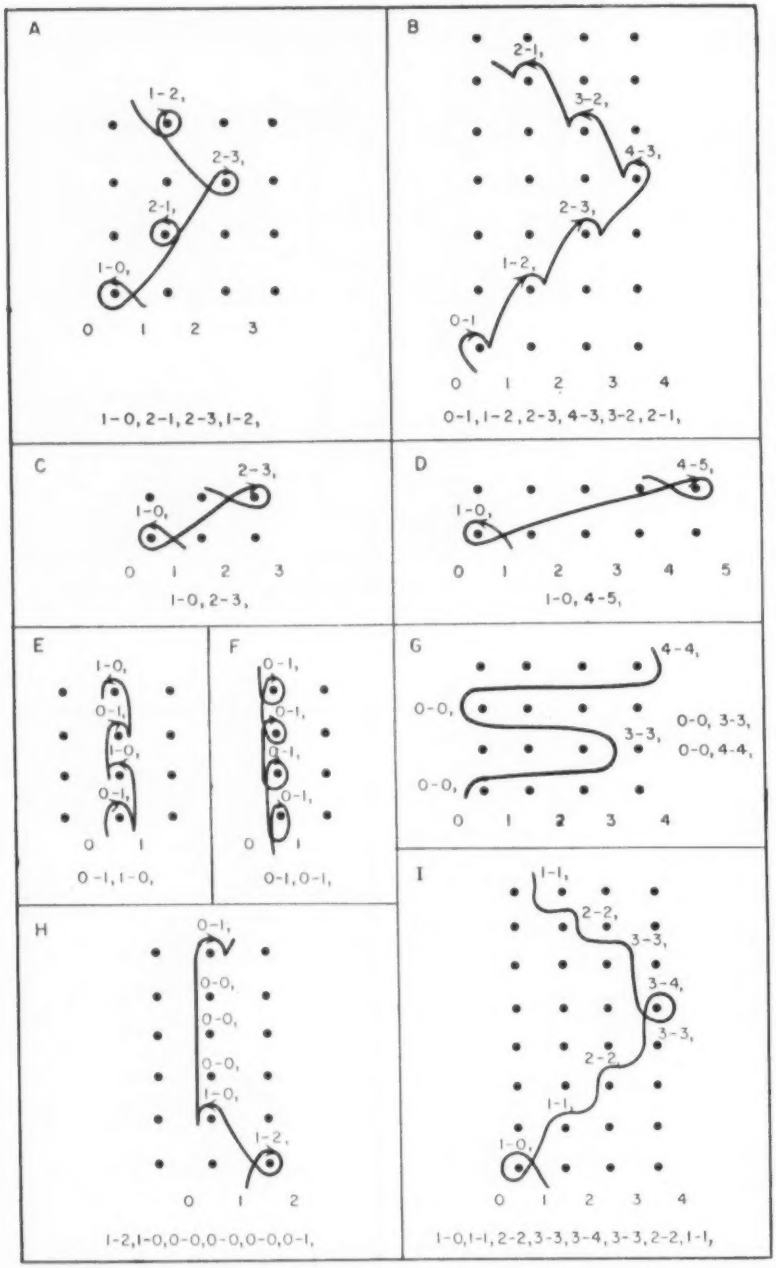
6. Swing the bars in opposite directions. When the front bar traverses



FOUR COURSES of the 1-0, 1-2, stitch show four overlaps and four underlaps. Changing tricot designs to pattern-wheel notations is simplified by reading only the overlaps and ignoring the underlaps.

to the left, traverse the back bar to the right. (Certain designs will require a deviation from this rule.)

7. The threading up of the guide bars must be included in the pattern notation. The threading up can be written down by indicating the gaiting or the relative position of the two guide bars at the start of the first course of the design. Empty guides can be indicated by dots, and filled guides by the numeral 1 or a letter denoting the type of yarn where more than one yarn type or color is used.



THESE TRICOT STITCHES can be used with the 1-2, 1-0, stitch or combined with each other to produce many variations. *A* is a 4-course closed-Atlas stitch. *B* features an open-Atlas stitch. *C* is the familiar 1-0, 2-3, stitch used in jersey. *D* is used for making satins and stable cloths. *E* is an open pillar stitch. *F* is a closed pillar. *G* is a laid-in stitch used on the back bar only. *H* is a float stitch used in pleat and plaid fabrics, and *I* is a float stitch used on the front bar.

The basic stitch and the most simple stitch in tricot design is the 1-0, 1-2 stitch. Variations of this stitch are made by making longer underlaps. A two-needle underlap produces the well-known 1-0, 2-3, stitch, and 1-0, 4-5, makes the satin stitch. All these stitches repeat on two courses. The longer the underlaps, the more stable the fabric.

Long Needle Traverses Make Stable Fabrics

Use of the 1-0, 4-5, lap on the back bar produces a very stable stitch, while 1-0, 4-5, on the front bar gives a satin effect and an excellent surface for brushing. The more needles traversed, the greater the number of threads that are locked between each stitch.

Using any combination of these types of stitches with the guide bar traversing in the same direction produces an elastic stitch. Vertical stripes are obtained by using different-colored warps or omitting certain threads from either bar in conjunction with 1-0, 2-3, laps.

Atlas or traverse laps are used in making many fancy effects in lace and in color, with zigzags and diamonds being the most easily produced. Variations in traverse can be made by swinging the guides over two needles and back over one or swinging over three needles and back over two. Diamonds are made with balanced lapping movements on both bars where both bars travel in opposite directions, if the gaiting and threading up are also balanced.

Argyle plaids in a nonrun stitch with upright wales are made with colored warps and a 48-needle double-Atlas stitch. When two colors or acetate and viscose yarns are used, a third color is made up where certain stitches are made from both yarns. To obtain suitable threading-up arrangements, the design can be drafted out on squared paper to show the finished appearance. The squared paper should have about 24 squares per inch vertically and 16 per inch horizontally to give a double-size picture of 75-den. fabric.

Float Stitches Are Used To Give Novel Effects

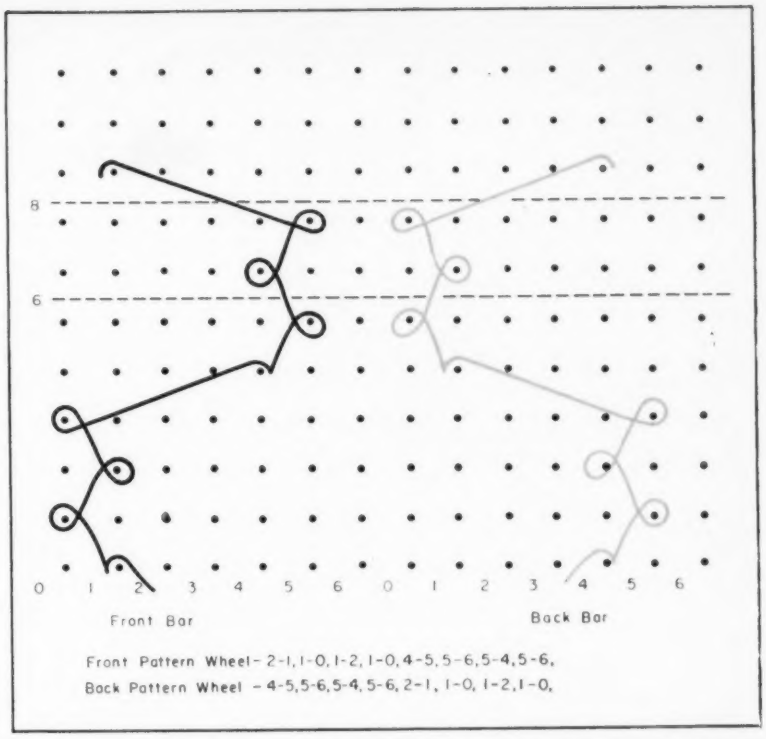
Spot effects can be obtained by using the float principle to float the unwanted colors. One guide bar is partially threaded; a few courses of 1-0, 1-2, or a similar stitch are knitted; and then no overlaps are made for several courses. The guides may be swung to the left or the right to

position the effect threads for their next working position.

A wider use of the float stitch is in making "tucks" or blister effects. The front bar knits 1-0, 2-3, stitch for perhaps 12 courses and then floats its yarns for 12 courses with an 0-0 movement. A 2-3, 1-0, stitch is used on the back bar. Variations of this principle can be made by using partially-filled front guide bars.

The float stitch can also be used in making squares, checks, and other similar patterns. A plaited effect is obtained by using different colors in each bar. If the back bar floats, horizontal stripes of the front-bar color are made. If the back bar is threaded up with two colors and floating is done, checks are made. Other checks can be made by threading up the front bar 4-color, 4-white and swinging over four needle spaces after four courses of 1-0, 1-2, stitch.

Pillar stitches are used to give vertical stability to the cloth, but novelty nets and perfect warp pin stripes can also be made. The open pillar is generally used to allow the other bar to swing in the opposite direction at every course. A very stable fabric is produced by 1-0, 4-5, laps in combinations with an open pillar stitch on the front bar.



FIRST STAGE in drafting a tricot design is to rule faint lines across the factors of 96. Fill in the lapping movements of one thread from each bar to your required design length. The back-bar draft may be filled in with a colored pencil. Extend the design one course to see that the line finishes on the correct space.

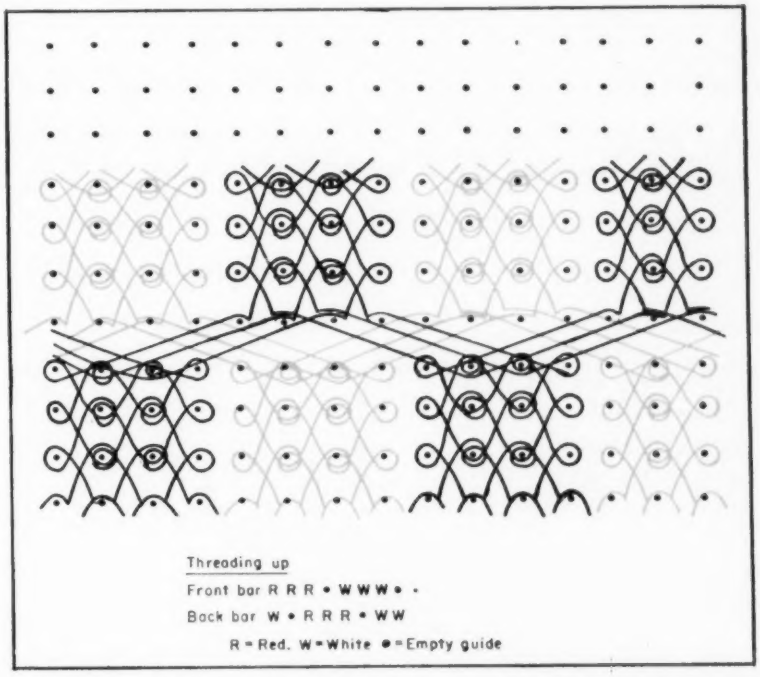
Heavy Yarns Can Be Used With Laid-In Stitches

Laid-in stitches are always used on the back bar and give a heavy, firm fabric. As the yarn does not enter the needle beard, heavier yarn numbers than usual may be used. Many novelty effects can be obtained with fancy, heavy-denier yarns by traversing the bar over a different series of needles at each course. The back of the cloth is used as the face side to show the novelty effect.

Plissé effects are made by producing a horizontal stripe of one stitch combination alternating with a horizontal stripe of a different construction. The front bar can knit 24 courses of 1-0, 2-3, (the back bar knits 2-3, 1-0,) and then follows 24 courses of 1-0, 2-3, on the back bar with 0-1, 1-0, on the front bar.

An interesting stitch with economic possibilities is one where one bar pillars and floats at alternate courses while the other bar ties the pillars together and laps the needles on the courses floated by the other bar.

These basic stitches in various combinations present the tricot designer with many possibilities. Pattern scope is made almost unlimited by the use of the new yarns such as Orlon, Dacron, dope-dyed yarns, and crinkled nylon.



FINAL STAGE in drafting a design is to fill in all threads on both bars to see that all needles have received a thread and that the gaiting is correct to give the required effect. Threading-up arrangement is read along the first course of the design. Front- and back-bar gaiting and pattern wheels must be lined up on the knitting machine to give the desired results.

CARD BOY Cornelius Haasnoot is on the ladder changing the jacquard-card insert to change a label pattern. The weaver changing filling is Joseph Masker.

Quick Pattern-Changing Methods Feature NARROW-FABRIC WEAVING

▶ Small orders are no problem at this large label-weaving mill because the equipment is set up in advance to weave most of the styles needed. Add good loom-maintenance practices, and you have a specialty mill that fills orders quickly and still holds weave-room production at a high level and waste at a low level.

By **RICHARD B. PRESSLY,** Assistant Editor, TEXTILE WORLD

QUICK-CHANGE METHODS in switching from one pattern of label to another are the basis of successful weaving operations at Alkahn Silk Label Co.'s Paterson, N. J., plant.

Silk and rayon labels in many patterns and colors are woven at the plant.

Rayon yarns for both warp and filling, dyed to order by an outside firm, are received at the mill in cheeses. Silk yarns are received in skeins.

Warps are creeled from the cheeses on a horizontal warper directly to the loom warp beams.

Filling is wound from the cheeses to the head-type bobbins for the shuttles on a Glodde belt-type quiller.

The mill is set up with equipment to project photostats of new label layouts on graph paper. As soon as the new style is laid out on the graph paper, card cutters cut the jacquard cards for the looms.

Style Changes Are Constant and Rapid

Style changes are so constant that two card cutters are kept busy all the time.

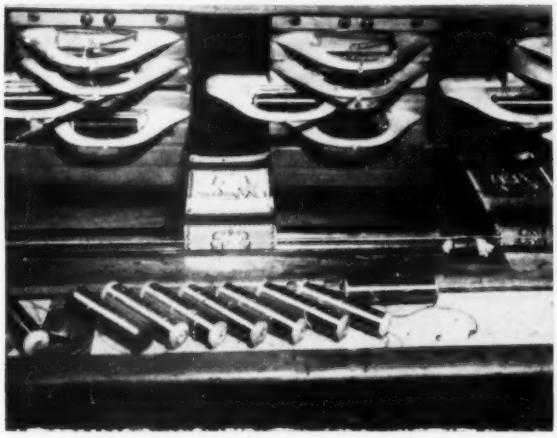
Card cutting, card sorting, and card stitching are all done on automatic machines. The man who operates the card-stitching machine also operates three other machines, in connection with assembling the cards, at the same time.

The harnesses are arranged in the

(*Continued on page* 222)

SINGLE-PROCESS FILLING PREPARATION is used at Alkahn. Edith Easton operates a Glodde belt-type quiller that winds head bobbins of filling straight from cheeses.

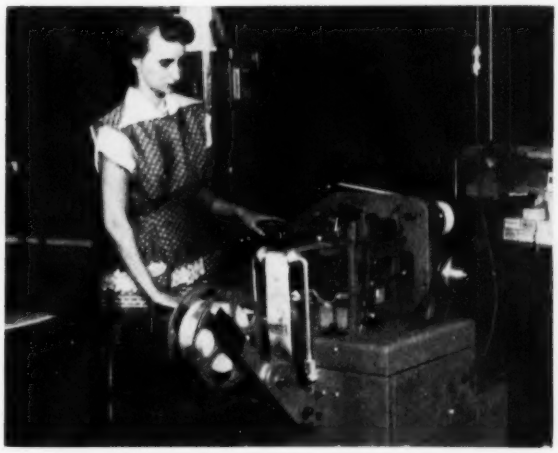
PATTERNS ARE CUT right in the weave room so that they can be quickly placed on the looms. George Greenway and Marinus Den Haan cut the patterns from photostats.



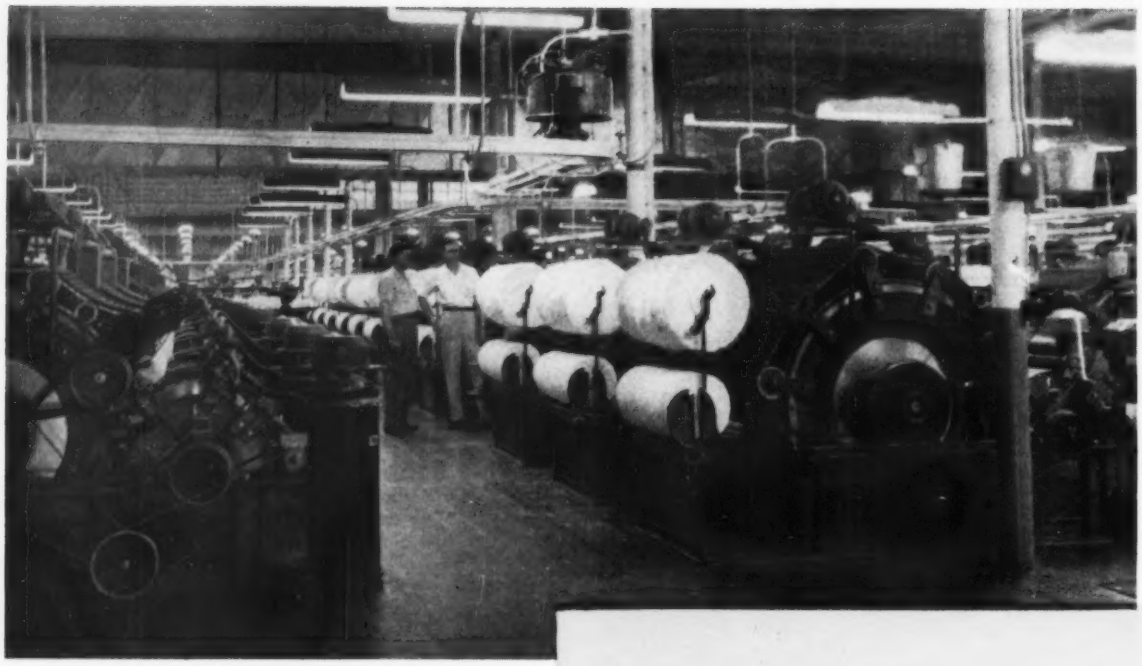
A 3-IN. WIDE LABEL is being woven on a four-bank batten Fletcher loom. Only two shuttles are being used on this label that gives the clothing manufacturer's name.

WEAVE-ROOM PRODUCTION is posted each day on the graph by Jean Vanden Houten. Alkahn management men consider this graph their most important guide to plant efficiency.

TWO JOBS IN ONE result as Gladys Miller inspects finished labels and counts them 10 at a time by measuring them on the yardstick fastened to the table.

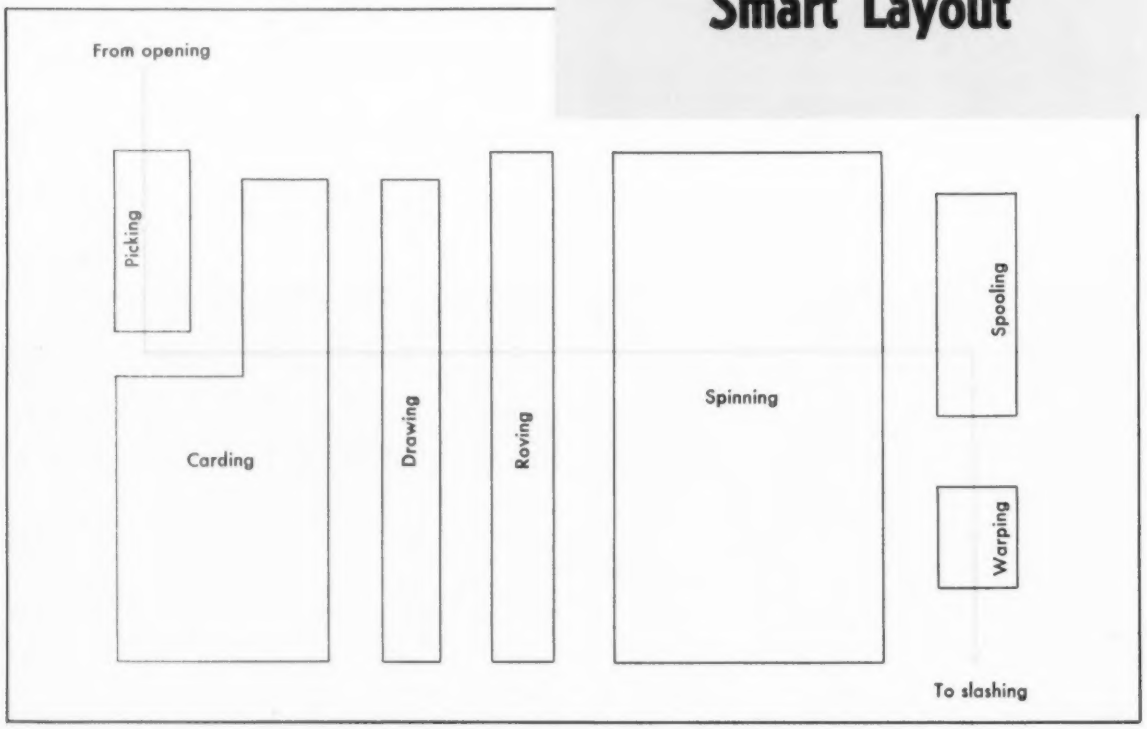


A TWO-IN-ONE OPERATION is used again on this machine that cuts the rolls of labels into single labels and folds the edges ready to sew into garments. Janet Van Euwen is the operator.

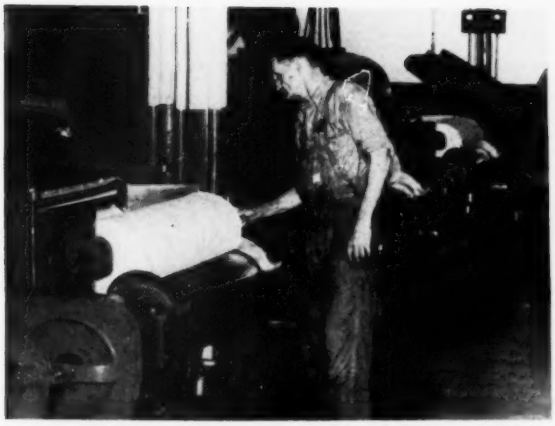


INDIVIDUAL MOTOR DRIVES, ball-bearing lickerins, traveling overhead cleaners, and 14-in. cans are the features of the 100 cards. Bill Ashley, overseer of the yarn mill, explains to the author (left) that card production for 14½s and 17s yarn is 8½ lbs. per hr. For sliver that goes into 20s yarn, production is 11 lbs. per hr.

Modern Machinery and Smart Layout



CONTINUOUS FLOW, with no backtracking, minimizes handling. All opening is done in the main mill across the street, and an underground pipe brings the cotton to the picker room of this unit. Total floor area for the mill (100 cards, 60 spinning frames, plus the other processes) is 94,827 sq. ft.



THE THREE PICKERS each have a two-blade and a Kirschner beater. The breaker-section blade beater runs at 1,290 rpm., and the finisher-section beater runs at 1,175 rpm. Pickers are equipped with blending reserve. The 57-lb. laps are checked weekly for evenness on a Saco-Lowell lap meter.

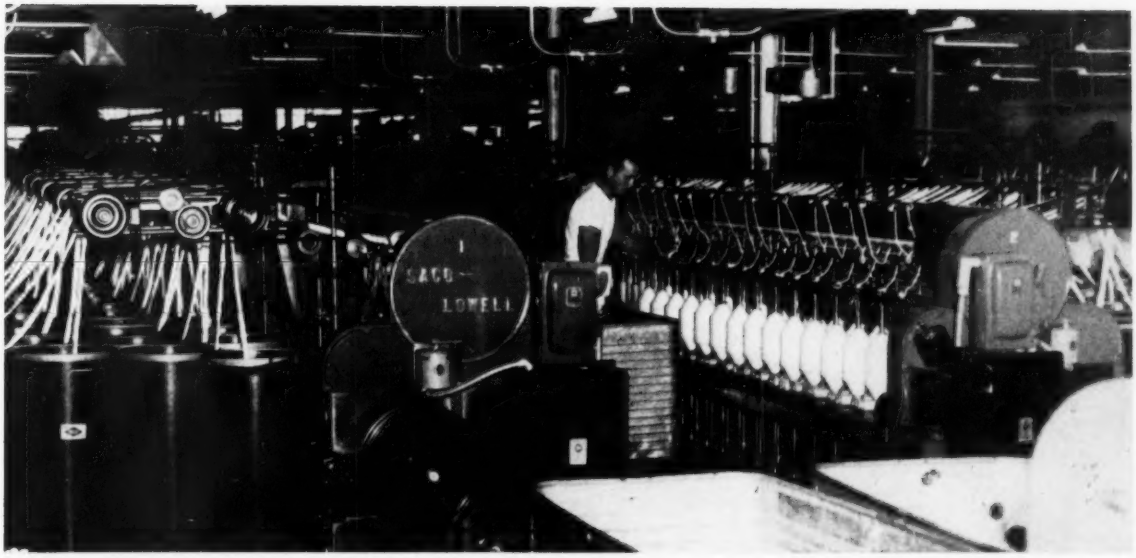
THREE-OVER-FOUR DRAWING is used for both breaker and finisher. Speed of the breakers, of which there are 14, is 100 ft. per min. The 14 finisher frames run at 96 ft. per min. Overhead cleaners serve drawing and all other processes in the mill except picking, spooling, and warping.

Keep Costs Low at NEW RIEGEL YARN MILL

By W. C. WESTBROOK, Consulting Editor, TEXTILE WORLD

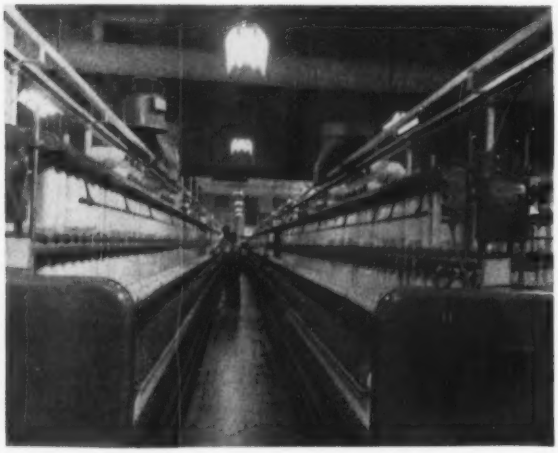
▶ Here's a picture story of the new warp-yarn mill that Riegel Textile Corp., Trion, Ga., recently set up in what was formerly a glove plant.

▶ All the machinery is new and handling is minimized—two main factors that enable this mill to produce better-quality yarn at less cost than the main mill across the street.



THE SIX SLUBBERS have 108 spindles each and produce 0.90-hk. roving at the rate of 1.33 lbs. per spindle hour with a spindle speed of 894 rpm. The frames are equipped with the Shaw drafting system and are individually driven by 5 hp. motors. Roving is checked for weight and evenness weekly.

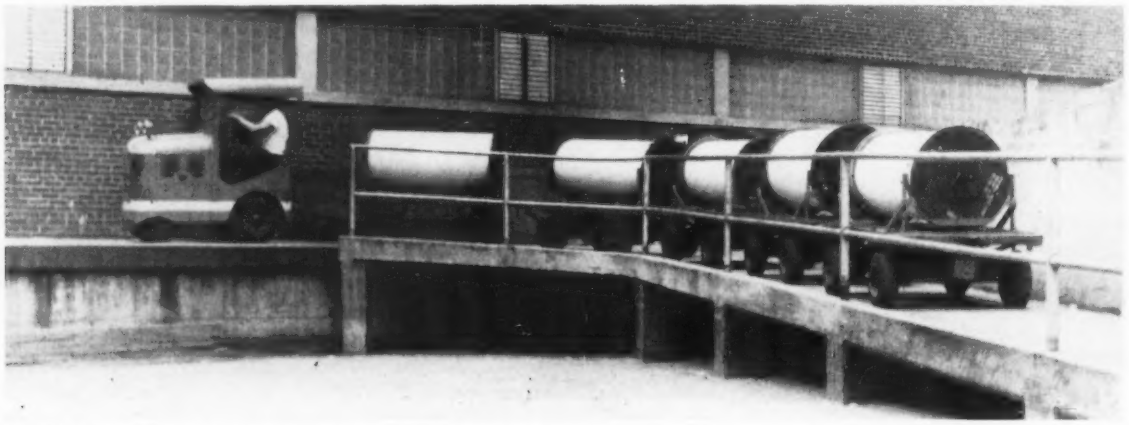
For more details, turn the page



SPINNING FRAMES have Shaw drafting elements. There are 60 frames, 252 spindles each. Middle and front rolls have needle bearings, and nylon condensers are used. The 9-in. traverse and 2½-in. ring allow a 0.50-lb. package of 14s, 17s, or 20s to be spun. Frames are individually driven by 15-hp. motors with Vari-pitch drive. Spindle speed is 8,800 rpm.

1,200 YDS. PER MIN. is the winding speed of the two spoolers. Each machine has 216 units. A cheese of 21½s contains 40,000 yds., and a cheese of 14½s has 23,000 yds.

THE TWO WARPERS run at 900 yds. per min. and have a capacity of 432 ends. The section beams are 56x30 ins.



READY FOR SLASHING, the beams are hauled on special trucks across the street to the main mill. Most of the production of the new warp-yarn mill is used right at Trion to supplement the main mill.

Your workers will find more job satisfaction if you follow these principles:

- **Greatest Industrial Democracy**
- **Finest Caliber of Leadership**
- **Insight Into Resistance**

EMPLOYEE MORALE
Depends on Job Satisfaction

By DOUGLAS WILLIAMS
Douglas Williams Associates

THE PROBLEM OF EMPLOYEE MORALE centers around management's awareness of the kinds of satisfaction the employee wants from his work.

There is a basic conflict between a worker and his job; and, unfortunately, this conflict is widening as the nature of the job continues to change and the worker develops responses to the changing conditions.

It is well established that employees want to work fully and effectively at their jobs, but a combination of factors often submerges this fundamental desire. Along with the tendency for corporations to become larger and more impersonal, there has been a strong development of job specialization; and here is the conflict. Employees have been changing; they need a higher proportion of social and cultural satisfaction from their work, but the nature of their jobs has become more mechanical. The net effect has been a tendency toward poor employee morale.

Attitudes Affect Productivity

The primary sources of productivity are:

1. More-automatic machinery
2. Mechanization of materials handling
3. Standardization of parts
4. Job simplification and specialization

But proper employee attitudes are an essential ingredient if the foregoing principles are to be realized to their full potential.

Granted, for example, that it is of first importance for a textile mill to have the most up-to-date looms with the most recent automatic devices. It is then critical that the weavers be motivated to turn out top quantity and quality on those looms, or the company's investment in the machinery won't pay off at the desired level of increased productivity.

The answer to this problem is the application of three principles that are being used and developed in actual practice.

1. Greater Industrial Democracy

If employees are advancing educationally and socially in this political democracy of ours, it follows that business can benefit by adjusting its policies in the direction of greater industrial democracy. Management should develop the philosophy of sharing its planning and activities with the employees.

People fear what they don't understand; that's only human nature. This fear applies as much to changes in machine assignments (increased workloads, for example) or operational changes as it does to anything else.

In the case of increased machine assignment, management has had an opportunity to work out the bugs, to get adjusted to the idea of the change, and to conclude that the new assignment is fair to the worker. The machine operator hasn't had that opportunity, and he is the one who is immediately affected. Isn't it natural that he will resist?

However, if he is in on the change and has the chance to participate, his attitude should be entirely different. He would have the same opportunity as management to get adjusted to the idea of the change and to see that his assignment is reasonable. He would ask questions, and his questions would give management the opportunity to remove doubts from his mind. He would be encouraged to contribute his own ideas on how the new machine assignment could be made even more productive. Make no mistake about it, employee ideas on this score are plentiful. The problem is to tap them.

When a job change is made by management, the worker often has to adjust to more than physical or mechanical changes. The methods used by the worker (such as patrolling procedure), his personal habits (when he eats, for example), and his relationships with supervisors and other em-

(Continued on page 228)

Based on an address at a meeting of the Textile Div., ASME.

Top Management Men Direct This Maintenance Program

Maintenance is considered as important as the production departments at this large plant. Consequently, top management men step into the maintenance program to help direct the practices. Under the direction of these men, a program was developed to—

- **Use data from checklists to simplify budgets**
- **Control maintenance manpower**
- **Increase operating time of equipment**
- **Reduce emergency jobs**

By O. W. GRAVELY

MANAGEMENT MEN are not doing their jobs unless they actively participate in one of their major problems—maintenance. The principles of management can be applied equally as well to maintenance as to production practices.

The objectives of a maintenance program are to set up procedures to enable management men to predict costs, reduce the number of emergency jobs, minimize equipment downtime, determine the need for equipment replacements, and improve systematic planning so that labor can be used more effectively.

At the close of the war years, we turned our thoughts from production at any cost to that of producing goods on a sound business basis. The result was that we developed a program to control maintenance systematically.

Cost System Is Placed On a Firm Footing

The type of equipment varies greatly between the departments of our plant, and a maintenance program designed to give good results in one department would be ineffective in another department. Since an over-all program would not be flexible enough in nature to cover every operating department, we selected a committee consisting of a representative of the works engineer's department, a maintenance-department foreman, a craftsman from the maintenance department, and a foreman from each department involved to study the condition of the buildings and equipment in every department of the plant.

The cost system showing the cost of repairs of buildings and major items of equipment was the subject of the first study. Results of the investigation showed that the system was ineffective because the costs of repairs on many major items of equipment were placed together. Consequently, an accurate check could not be made of repair costs on individual equipment items.

The investigation also showed that the existing cost system was capable of doing the required job. Revisions were made in its details to give each major item of equipment its own charge number. When the changes were completed, the cost-control program was on a firm footing.

A Checklist Is Made To Control And Budget Building Repairs

After the cost-control program became effective, the committee inspected the condition of the buildings. When the inspection was completed, information had been recorded to provide data for future inspections. The following items are listed on the inspection forms, and space is provided on the forms to include estimates of needed repairs:

1. Foundation walls
2. Columns
3. Floors
4. Stairs and aisles
5. Interior walls
6. Roofs
7. Exterior walls
8. Doors
9. Windows
10. Fire escapes
11. Loading platforms
12. Pipelines
13. Smaller buildings
14. Grounds
15. Drains and sewers
16. Lighting
17. Glazing
18. Stacks and ventilators

The forms are used by the works engineer's department as a checklist to inspect the buildings once each year. As soon as the inspections are completed, a report is given to each department on the condition of its building so that the needed repairs can be included in the department's budget for the year.

Data on Individual Equipment Controls Maintenance Work

The committee studied each department individually to decide what maintenance work should be done to each machine. The data collected on

(*Continued on page 199*)

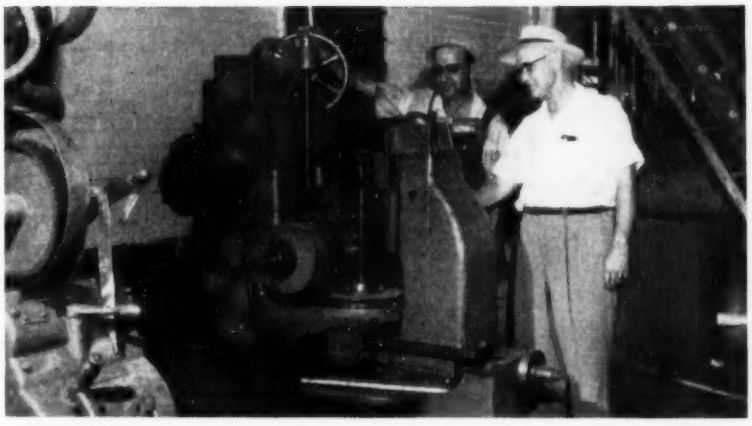
O. W. Gravely is the works engineer for Electro Metallurgical Co. Div., Union Carbide & Carbon Corp., Niagara, N. Y. This article is based on his talk at the fourth annual Plant Maintenance Show and Conference in Cleveland, Ohio.

Maintenance Is Important Business At Huntsville Mfg. Co.

The mill manager, superintendent, and plant engineer confer frequently to work out maintenance problems at this 142,808-spindle, 3,500-loom mill. The maintenance department is set up under the plant engineer, who directs eight foremen over self-sufficient departments. Results are—

- **Much equipment is instrument controlled**
- **Shops and equipment are centrally located**
- **Labor and equipment-operating costs are low**

By RICHARD B. PRESSLEY
Assistant Editor, TEXTILE WORLD



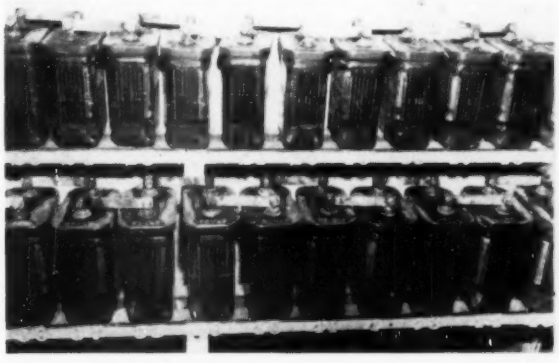
JIM YOUNG, PLANT ENGINEER, and Loyd McCarver, machinist, set up a machine to cut a special gear.

MANAGEMENT MEN are directly in contact with plant maintenance at Huntsville Mfg. Co., a division of M. Lowenstein & Sons, Inc., Huntsville, Ala.

The local management is headed by a mill manager and mill superintendent. A plant engineer directs all maintenance work and reports to the superintendent in detail at the weekly meeting of the general overseers and the superintendent.

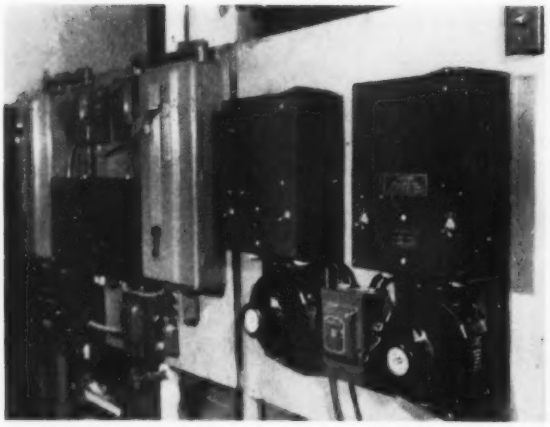
The Plant Engineer Contacts Management and Supervisors

Daily contacts between the superintendent and plant engineer are common so that management men always know of the physical develop-

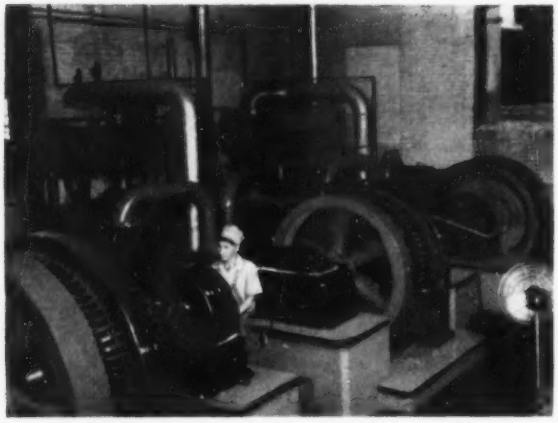


SIXTY STORAGE BATTERIES supply 120-v. current to the instrument controls on the 11 switchboard units.

THE HEAD CARPENTER, C. H. Mason, cuts a miter joint with a power saw to illustrate how machines eliminate hand labor.



ELECTRONIC CONTROLS on the boilers leave the foreman of the boilers free to service other equipment.



SIX COMPRESSORS, in addition to boilers and other equipment, are serviced by Theo Matthews on his shift.

ments of the maintenance department.

The plant engineer contacts the heads of production departments, and maintenance in each department is based on a common decision of the head of each department and the plant engineer.

Large projects are referred to the mill superintendent and/or the manager for approval.

The plant engineer is aided by an assistant engineer whose duties are similar to those of the master mechanic in most mills. The assistant plant engineer has direct charge of eight working foremen who supervise a total of 30 maintenance employees, including themselves, on three shifts.

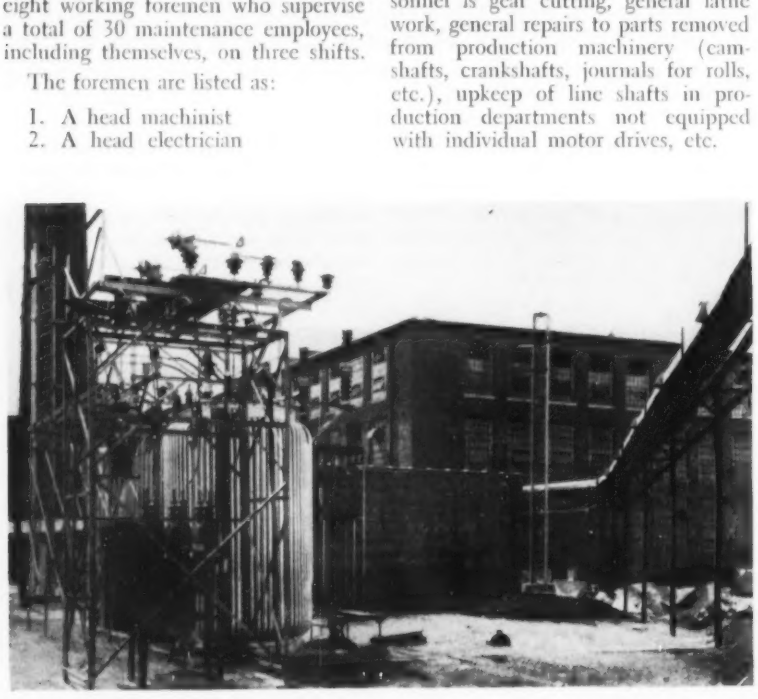
The foremen are listed as:

1. A head machinist
2. A head electrician
3. A foreman of boilers and compressors
4. A foreman of humidifiers and air conditioning
5. A sheet-metal-shop foreman
6. A plumbing and heating foreman
7. A yard or labor foreman
8. A head carpenter

Each maintenance department is a separate unit of operation.

The head machinist is in charge of machine tools for metal work and the welding shop.

Work done by machine-shop personnel is gear cutting, general lathe work, general repairs to parts removed from production machinery (camshafts, crankshafts, journals for rolls, etc.), upkeep of line shafts in production departments not equipped with individual motor drives, etc.



ONLY ONE POWERHOUSE is used for the entire plant. It contains all switchboards and is located 100 ft. from the electric shop.

Mechanics and Electricians Service Production Machinery

Line shafting is oiled by the head machinist's crew. An example of reduced maintenance care with less machine-part wear is oiling of line shafting. Formerly, the shafting was oiled weekly with common machine oil. Now, a premium oil is used, and the shafting is oiled only once every six weeks. Even with less-frequent lubrication, the shafting now needs less mechanical attention.

The main force of the machine-shop crew is concentrated on the first shift with only one employee, a machinist, on the second and third shifts. The machinist on these shifts doubles as a welder when necessary to keep production machinery running.

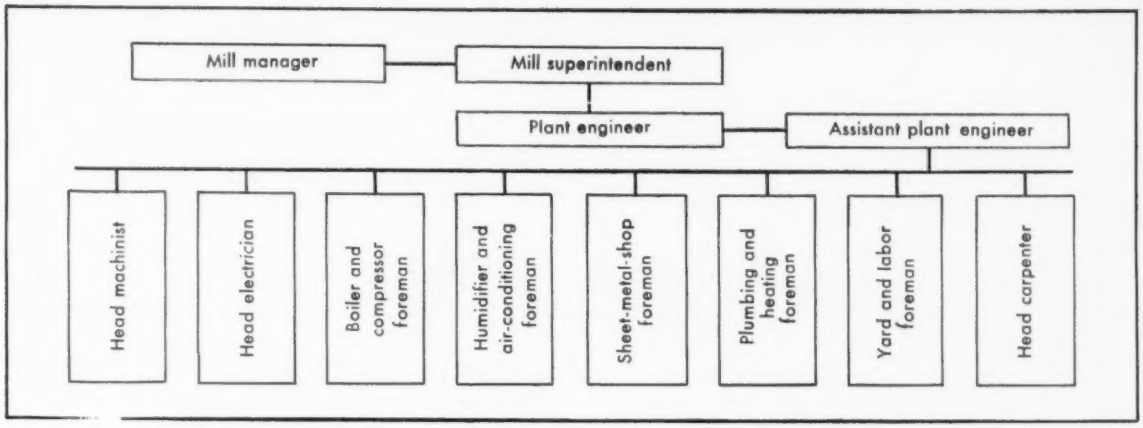
The head electrician handles his job in much the same way the head machinist runs his.

First-shift electricians replace wiring conduits, rewire entire production departments when individual motor drives are added, rewire departments for new lighting fixtures, and do all electrical work needed to keep the plant operating.

The one exception to the total self-sufficiency of the electrical department is that motors are sent to outside electric shops for rebuilding jobs when rewinding is necessary. Tests have shown that it is cheaper for this mill to have motors rewound at outside shops.

Motors that drive main shafting in production departments are systematically oiled and maintained by the electricians.

Motors of the antifriction type are not torn down and regreased. If, at the weekly inspection, a motor appears to be unusually noisy, it is re-



ONLY THREE MEN separate the mill manager from the eight supervisors over all mill maintenance.

placed with a spare motor. The noisy motor is torn down later in the mill's electric shop, and the new bearings and grease are added.

Several motors with antifriction bearings have been in service for 14 years without being greased or serviced.

Most Electrical Work Is for Equipment Upkeep—Not Repairs

One electrician on the second shift and one on the third shift repair electrical breakdowns. Breakdowns aren't frequent, and most of these two electricians' time is spent in inspecting and oiling groups of motors they are responsible for.

Burned-out lights are replaced on the second and third shifts. If burned-out lights aren't located in a strategic position, they are not replaced in large production departments until 50 or 60 lights are out. Then all lights are replaced at one time.

Many electrical problems are eliminated at the plant because a single powerhouse encloses all switchboards, which are located next to the power-company substation.

Power is received at the power company substation at 44,000 v. The power is broken down to 2,300 v. for the power-unit switchboards and is distributed to unit substations at 600 v.

The main power unit in the powerhouse is surrounded by 10 units, one for each production department of the mill.

The main unit is equipped with an instrument that constantly records any variation in the incoming 2,300 v. This instrument, and other instruments located on the units for production departments (Weave Room No. 1, card room, etc.) to indicate grounds on the lines, are energized by a group of 60 120-v. storage batteries that keep the instruments constantly in operation even when the power fails.

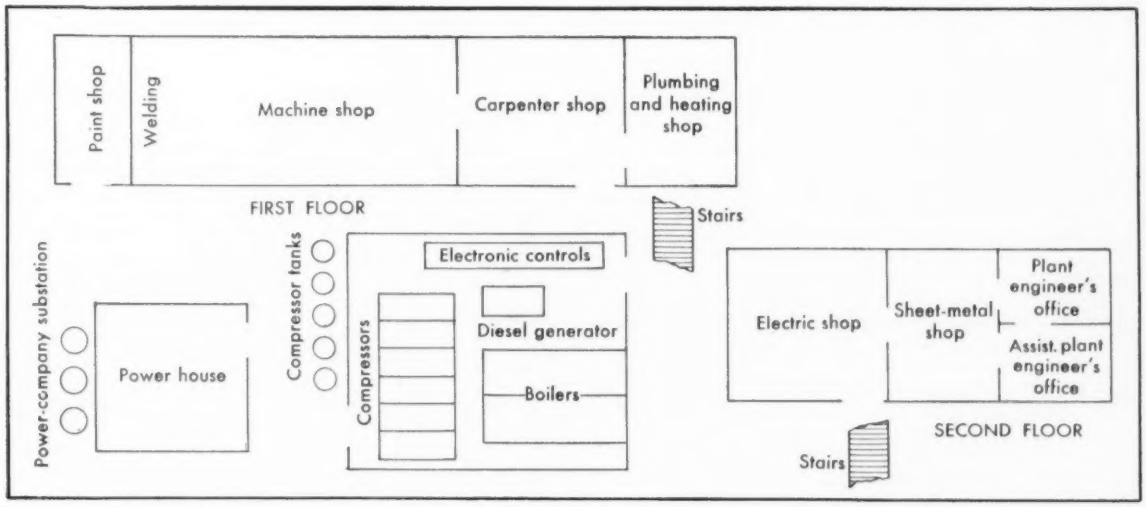
Since all power controls and switchboard panels are located together near the electric shop, they can be inspected frequently; and few troubles occur.

All Compressors and Boilers Located in One Working Area

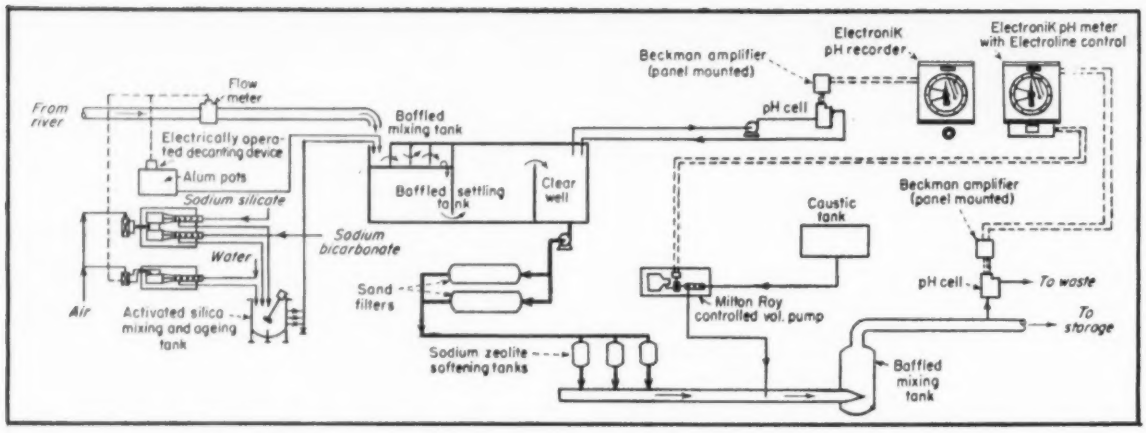
The foreman of boilers and compressors is rated as a foreman and receives a foreman's pay even though he does not have any employees under his supervision other than a man each on the second and third shifts to service the equipment.

Formerly, the four double-unit compressors were scattered at different places around the mill; and three

(Continued on page 210)



A 200-FT. WALK from his office places the plant engineer in any maintenance operating department.



RELATIVE POSITIONS OF each unit in the water-treating system are shown in this flow diagram.

Automatic System Regulates pH, Assures CLEAN PROCESS WATER

INTER-OFFICE CORRESPONDENCE

TO: Mr. Joseph Tyler FROM: Mr. Merrill O'Brien

SUBJECT: Water Analysis
Week Ending 3/14/52 DATE: March 19, 1952
File: 8-1-1

	pH	Fe	Si	Turb.	Solids Total	Solids Inorganic	Solids Volatile	Hardness	Chlorides
River Water									
Monday	7.65	0.2	11.0	11	201	161	40	85.5	10.91
Tuesday	7.51	0.2	9.6	155					
Wednesday	6.68	trace	7.2	950					
Thursday	6.8	trace	7.3	450					
Friday	7.08	trace	7.8	133	221	173	48		
Filtered Water									
Monday	7.18	0.1	9.8	9	219	185	34		8.49
Tuesday	7.08	no	9.4	14	197	164	33	78.66	
Wednesday	6.58	no	7.0	12					
Thursday	6.28	no	6.8	12					
Friday	6.68	no	7.2	11					
Powerhouse Water									
Monday	7.65	0.1	12.0	9					9.70
Tuesday	7.48	0.1	9.4	13	232	200	32		
Wednesday	6.85	trace	6.5	11	160	123	37	8.55	
Thursday	6.9	trace	6.6	11					
Friday	7.21	no	7.4	11					
Softened Water									
Monday	7.21	no	10.1	10					10.91
Tuesday	7.38	no	9.8	13					
Wednesday	6.68	no	6.8	12	176	128	48		
Thursday	6.38	no	6.9	11	118	107	11	5.13	
Friday	6.81	no	7.3	11					
Dyehouse Water									
Monday	7.31	trace	9.9	10					9.70
Tuesday	8.38	trace	9.9	12					
Wednesday	7.0	trace	6.6	12					
Thursday	6.98	no	6.5	11	165	115	50		
Friday	7.18	no	7.3	10	165	112	53	5.13	

Merrill O'Brien

MOB:rr
CC's: Mr. Charles Fair
Mr. Joseph Bono

FLUCTUATING TURBIDITY—from 11 to 950 parts per million—shows up on this laboratory report taken from Lees's files. This report was made a few days after the new installation was in operation. Now, the pH is controlled much more closely—and automatically.

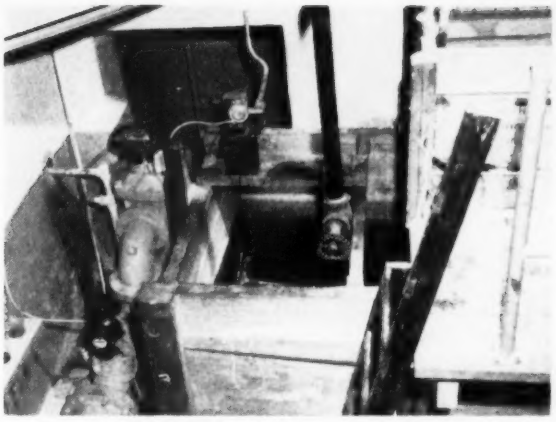
- **Fluctuating turbidity and pH of river water at James Lees & Sons Co. made purification a touchy and costly process**
- **Now, a new automatic system delivers 560,000 gals. of uniformly good water every 24 hrs. at the Bridgeport, Pa., carpet mill**

By JOSEPH TYLER
Superintendent, Power and Maintenance
James Lees & Sons Co.

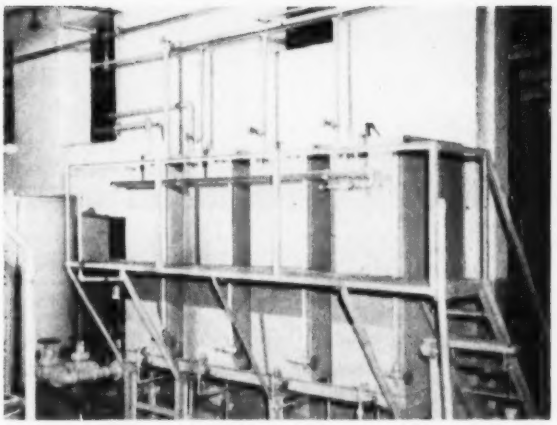
THE MOST SEVERE river-water conditions create no clarifying or operating problems in Lees's filter plant on the Schuylkill River since a new chemical feed system has been in service.

Under the old system as much as 2,000 lbs. of alum in 10 to 12 hrs. was manually fed into the raw water at times of high turbidity. Even with this much alum the results were unsatisfactory and the bed of the sand filters became plugged.

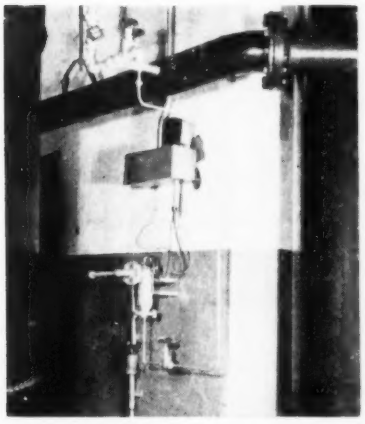
Now, with the new automatically controlled system and continuous pH records, 200 lbs. per day is the largest amount of alum used, even during periods of high run-off when the river is red and muddy, with turbidities as high as 950 parts per million and more.



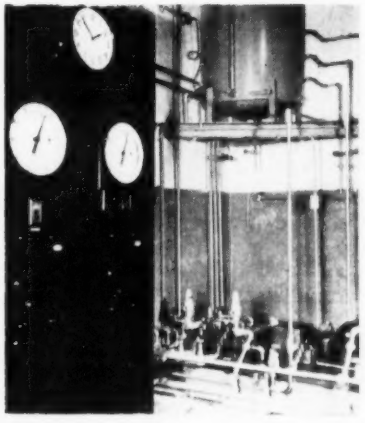
ALUM POTS are adjusted to feed alum to maintain pH needed to promote flocculation in the settling tanks. With this new system 200 lbs. of alum is the maximum daily consumption.



SUPPLY TANKS for sodium silicate, sodium bicarbonate, and pure water store solutions until they are mixed proportionately in the ageing tank. The fourth tank is for caustic soda.



CONTROL OF pH is maintained by this flow-type electrode that activates an automatic caustic-feed pump.



ACTIVATED SILICA is mixed in proper proportions, as needed, in the ageing tank, which is fed by the pumps as shown.

The new system reduces the chemical costs, eliminates the need for operators working double shifts, and produces a continuous supply of good water. The system solves the problem of how to treat the water at pH 6.5 for optimum flocculation and yet continuously supplies water at pH 8.0.

How the New System Works

River water is pumped to a baffled trough where the activated silica and alum are added at the influent end. Seven parts per million activated silica are added to the raw water in proportion to the flow. This addition is accomplished by means of a flow meter with electrical contacts on the influent line.

The meter measures the flow and simultaneously actuates three air-operated Milton Roy controlled-volume pumps with micro-stroke-length adjustment. One pump feeds sodium silicate solution to the mixing and ageing tank, one feeds clarified water, and the third feeds sodium bicarbonate, the activating agent. The pumps have been designed to feed the three components of the activated silica in stoichiometric proportions.

The mixing and ageing tank is mechanically agitated, and the activated silica overflows to the influent end of the baffled trough. In order to control the ageing time of the silica, the tank is tapped at three elevations. Ageing time depends on the elevation from which the activated silica is allowed to overflow—the lower the elevation, the less the capacity or retention time of the tank.

The alum feed is automatic, with the feed rate manually adjusted in accordance with the resulting pH, which is measured and recorded by means of a Beckman flow-type pH-cell-and-amplifier assembly and a circular-chart electronic pH recorder and indicator developed by Minneapolis-Honeywell. Any incorrect valve settings on the alum feed line are recorded by the potentiometer, and adjustments can be made before damage results.

The raw water (plus the activated silica and alum) drops into a series of underground settling tanks interconnected in series by overflow baffles. From the final tank, called the clear well, the water is pumped through two horizontal sand filters operated in parallel. A small auxiliary pump at the clear well pumps a portion of the clarified water through the pH cell. An emf signal in proportion to the pH is transmitted to the ElectroniK potentiometer located on the panel board.

After being filtered, the clarified water is softened by the sodium zeolite method in three vertical tanks operated in parallel. The underflows from the three tanks of clarified and softened water are mixed in a baffled tank and pumped to storage tanks. Immediately after the water is mixed, a continuously flowing sample is bypassed through a second Beckman flow-type pH electrode assembly that transmits an emf in proportion to the pH to a second circular-chart ElectroniK pH recorder and indicator.

The latter instrument, with an Electr-O-Line relay, operates a small motor that regulates the stroke length of a Milton Roy motorized micro-controlled-volume pump. The pump feeds caustic as needed to the clari-

(*Continued on page 216*)

Here Is a Card-Room Program

► **Before you revise your present waste standards, you have to establish control over the weighing, classification, and segregation of waste. Explain the cost of waste and the purpose of setting standards to your employees. After you revise your standards, explain the types of waste and how graphs are used to show the progress of the program.**

By D. E. BAYLIS

A SUCCESSFUL WASTE-REDUCTION PROGRAM can be set up if you follow this outline:

1. Establish control of waste weighings.
2. Establish control of classification and segregation of waste.
3. Decide what total weight to use to get percentage.
4. Figure your process costs.
5. Call a waste conference to explain:
   (a) How costs are determined
   (b) What a waste standard is
   (c) How waste standards are worked out
   (d) Who sets the standards
6. Revise your present standards.
7. Call a waste conference to explain:
   (a) Reworkable and nonreworkable waste
   (b) Waste graphs and how to use them
   (c) Effects of reprocessed waste on processes

Control Waste Weighings

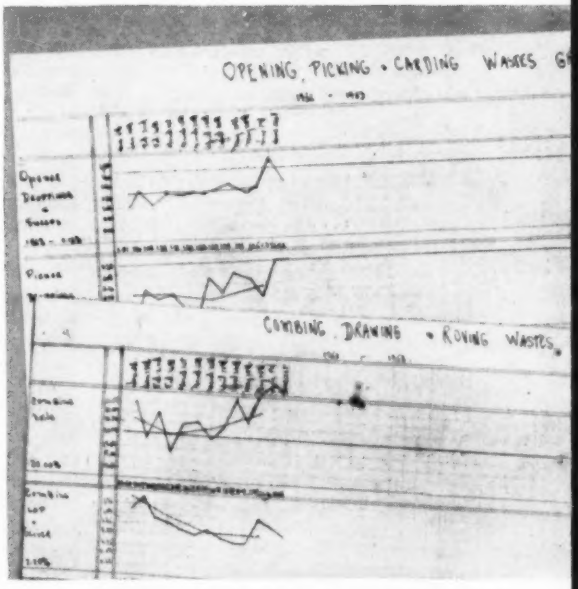
All wastes should be sent to one location for weighing and recording, and one person on each shift should be responsible for all weighings. This person is the most important single factor in waste control. Before a waste-reduction program can be started, everyone must agree that the recorded weights are as correct as is humanly possible.

The weigher should not only be reliable, but he should know the sources of waste so that no confusion will exist in weighing and recording.

All trucks of waste should have a ticket showing the type of waste and the department from which the waste came. The trucks should be painted a special color and the tare weight marked in bold figures.

A departmental cross check can es-

WASTE SAMPLES should be set up and boxed for the guidance of the waste-handling personnel. The proper separation and handling of waste is a must.



GRAPHS OF THE WASTE RECORD are effective only if every supervisor understands how the graphs

WASTE-CONTROL Program

tablish the correctness of waste-house weighings. The simplest cross check is to weigh and record all wastes in the department concerned without the knowledge of the waste-house personnel. Then, at the end of the week, the tally from each source is checked.

You can evolve your own check system with little effort. One method is to use duplicate preprinted tickets with space provided for the weight entry; another way is to use a grocery-store type of carbon copy. Whatever check system you decide on, you are now ready for the next step.

Control Classification

Some mills segregate opening waste from picker waste. Other mills group the two together and are willing to take the subsequent loss in resale value for the sake of convenience.

One mill picks Strict Low Middling card fly for 30 secs. while another mill picks Middling card fly for 45 secs. Each has what it believes to be a valid reason for its procedure.

Whatever your own picking procedure is, the best way to control your waste classification is to set up a box of waste-sample types in conjunction with the waste dealer so that waste can be processed economically. All types of waste should be included in the box so that an easy reference is available when needed.

What Total Weight To Use

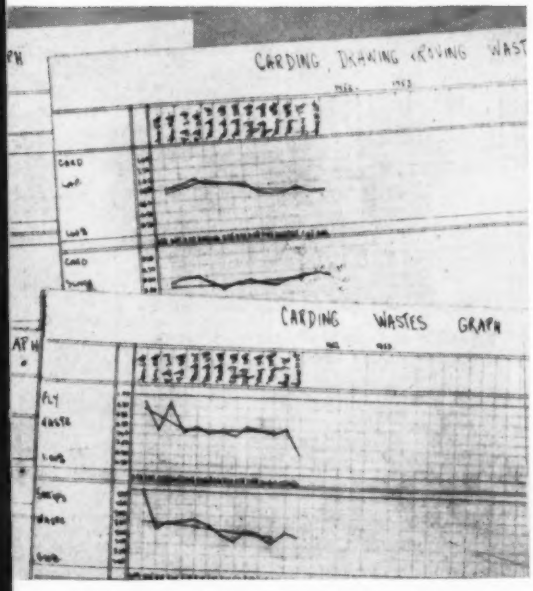
Most mills use the pounds converted from the hank-clock reading to get the percentage of waste from the process. However, some correct for the hank-clock readings and the moisture in raw stock, sliver, and roving.

However, these corrections have very little influence on the final waste percentage and for all practical purposes may be eliminated.

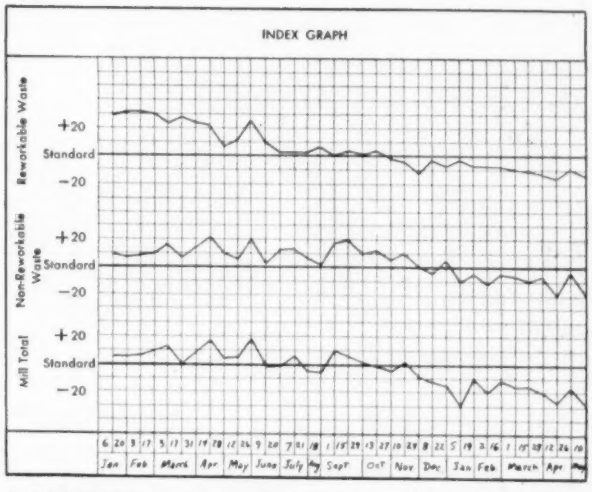
Often the weight of raw stock fed is used to get the waste percentage for all card-room processes, but this weight gives a waste percentage lower than what is actually obtained.

The following table is a guide to set up a practical set of divisors:

Opening and picking
  Net raw-cotton input
Carding
  Drawing production + card waste + drawing waste
Drawing
  Drawing production + drawing waste
Roving
  Roving production + roving waste



are built up. Explaining such graphs is a necessary part of a waste-control program.



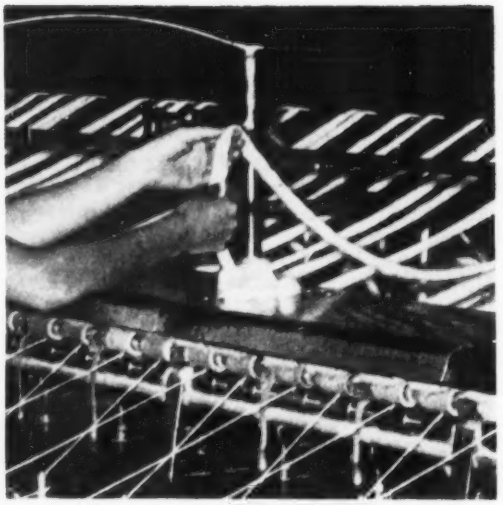
THE PROGRESS of your waste-control program can be plotted on an index graph like this one. Here is how to calculate the index points:

Weight of input = 12 750 lbs.
Waste standard = .65%
0.0065 x 12,750 = 83 lbs.
Actual waste = 87 lbs.

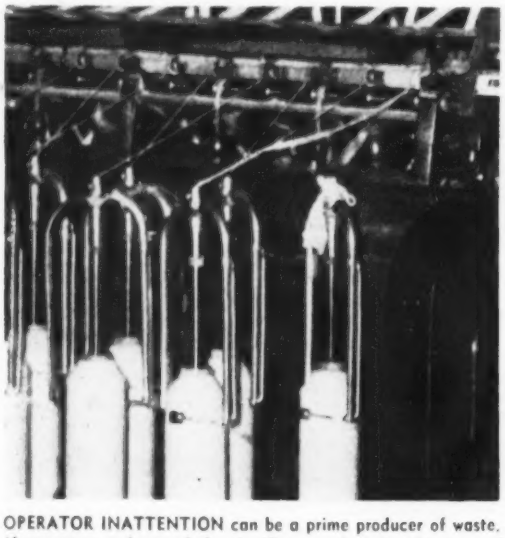
$$\text{Index Point} = \frac{87}{83} = 105\% \text{ or } 5\% \text{ above the standard line}$$

Sources of Waste

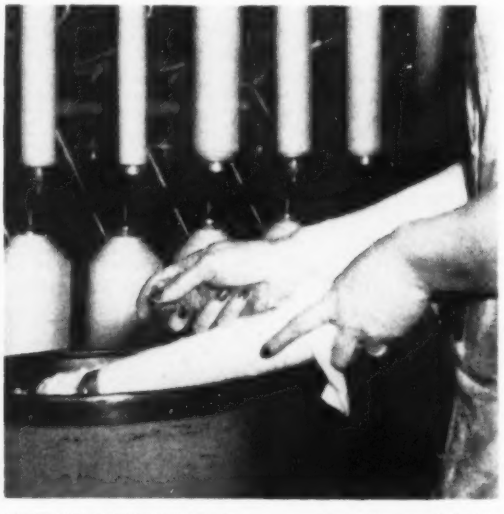
SCRAPING dirty bales will give you about 3% scrapings. Plucking off stencil marks and surface dirt saves waste and is just as quick as scraping.



SLIVER WASTE mounts if the tender has a habit of breaking off too much sliver in piecing. Training in waste consciousness will reduce this waste.



OPERATOR INATTENTION can be a prime producer of waste. If operators understand the significance of waste, this type of waste is reduced.



GETTING RID OF WASTE to cover up inefficient work habits is hard to stop if the operator doesn't understand the purpose of waste control.

Figure Process Costs

To be practical about informing operating personnel about costs, it is better to stick to the manufacturing costs of raw materials, costs of labor, and overhead. It is relatively simple to build up a table of waste costs.

The waste breakdown in the accompanying table is a quick method of obtaining reasonably accurate waste costs. It is not intended to be fully representative of all card-room wastes, but it shows the principle wastes involved. Wastes that are returnable to process have a loss value amounting to the combined value of labor and overhead.

Call a Conference On Waste

If you stagger your times and groups, you can get a wide coverage of representative employees. They will be flattered that you show enough interest to come on their shift to put on a 45- to 60-min. program.

The employees will probably be

amazed at the total monetary loss for the six months preceding your first session.

A natural development will then be to disclose the actual value of a lap, a truck of roving, and a full bobbin. Most employees and even some supervisors do not realize the value of the materials in the process they are handling.

A waste standard can be compared to a speed limit on the highway. You can exceed the speed limit, but you endanger the lives of the people in your car. So it is with waste: if you exceed the standard allowed, you endanger the livelihood of your fellow workers.

How To Get Waste Standards

A full explanation of how a waste standard is worked out can be given at this meeting. It should be explained that waste standards are based on two general procedures: (1) tests and (2) calculations.

1. Tests are made on machinery set up with the proper settings for an agreed length of time. The tests are surveyed, and the test data are summarized so that a standard can be determined. Most preparatory processes fall in this category.

Standards set by tests are usually on the following types of waste: opener, picker, dust, fly, top-clearer, sweeps, etc.

A good illustration is to show how a waste test is actually performed. The details of the results obtained from different cottons, such as SM, M, or SLM, will be interesting to the groups.

2. Calculated standards can be set up wherever there is a tangible starting point in the process. On card-sliver waste, for instance, decide how long the card should run before piecing up after stripping; you know the number of strippings per shift and the running time per shift. Include in this standard an allowance for end breaks and the length of time an end is down before it is pieced up.

The calculation looks like this:

$$\frac{\text{(minutes run after stripping before piecing)} \times \text{(strippings per shift)}}{\text{(minutes in 8-hr. shift)}} = \frac{183}{480} = 0.63\%$$

$$\frac{\text{(end breaks)} \times \text{(downtime)}}{\text{(minutes in 8-hr. shift)}} = \frac{1 \times 1.3}{480} = 0.27\%$$

$$0.90\%$$

Your waste standard for card sliver is .90%.

Waste standards may also be computed by a combination of these two methods. In other words, basic data are obtained by test, and the standard is calculated from the test data at hand.

(*Continued on page 236*)

Waste Handling

A PORTABLE SCALE can be used to make the daily weighings of waste. Waste figures are kept for each operator and each type of waste.

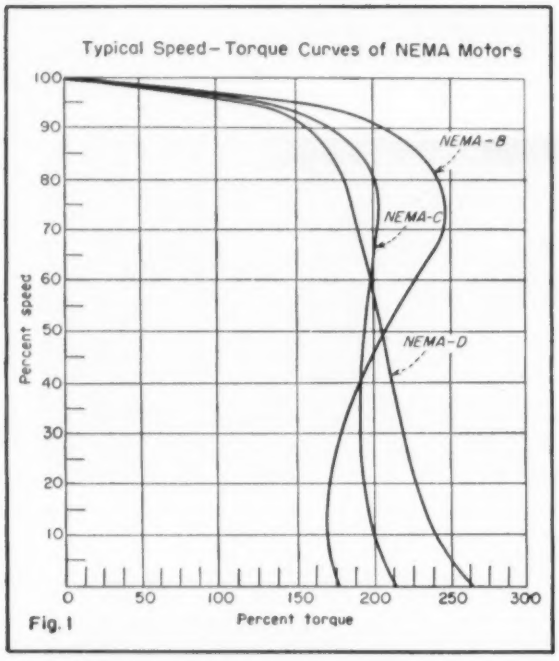
THE CHUTE TO WASTE ROOM can be equipped with a bell system to make sure the waste is properly segregated in the waste room.

Value of Waste per Pound (in Cents)
(based on 39.92c cotton)

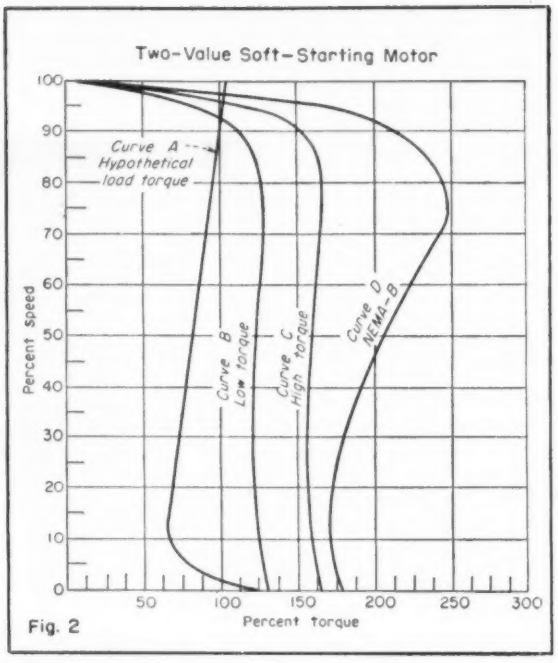
Type of waste	Labor	Overhead	Net cost	Resale value	Net loss
Opener	0.36	0.51	40.79	14.00 (picked)	33.79*
Picker	0.36	0.51	40.79	14.00 (picked)	33.79*
Sweeps	0.36	0.51	40.79	14.00	26.79
Picker lap	0.36	0.51	40.79	39.92	0.87
Fly	0.79	1.25	41.93	15.00 (picked)	34.43†
Strips	0.76	1.25	41.93	24.00	17.93
Sweeps	0.76	1.25	41.93	12.00	29.93
Card lap	0.76	1.25	41.93	39.92	2.01
Card sliver	0.76	1.25	41.93	39.92	2.01
Drawing sliver	0.33	0.32	40.57	39.92	0.65
Interdraft roving	0.74	0.59	41.25	39.92	1.33

(From Technical Bulletin No. 1033, USDA, Tables 10 and 11)

* includes 7.00c per lb. to pick the waste
† includes 7.50c per lb. to pick the waste



THE NEMA-B MOTOR should be used in all textile applications when it meets the requirements. Use the NEMA-C only for heavily loaded conveyor belts. The NEMA-D will not run economically and should not be used except for motors frequently started.



TWO-VALUE SOFT-STARTING MOTORS are the results of an attempt to compromise between high- and low-starting torque motors. These motors do an excellent job when conditions are correct. The trouble is that such a motor may fail to start on a cold morning.

How To Select TEXTILE

The acceleration requirements for the different machines in a textile mill vary so greatly that one general type of motor cannot be economically applied to all types of machines. A few things to consider in selecting the correct motor for your needs are—

- **The rate of acceleration required**
- **How often the machine is started**
- **How much jogging the starting requires**
- **The starting safety factor involved**

By F. D. SNYDER, Westinghouse Electric Corp.

Based on a paper presented at a recent Atlanta meeting of the Textile Subcommittee, American Institute of Electrical Engineers.

THE ACCELERATION REQUIREMENTS for textile motors can be determined only by studying the requirements of the machine itself and then matching motor and drive characteristics as closely as possible.

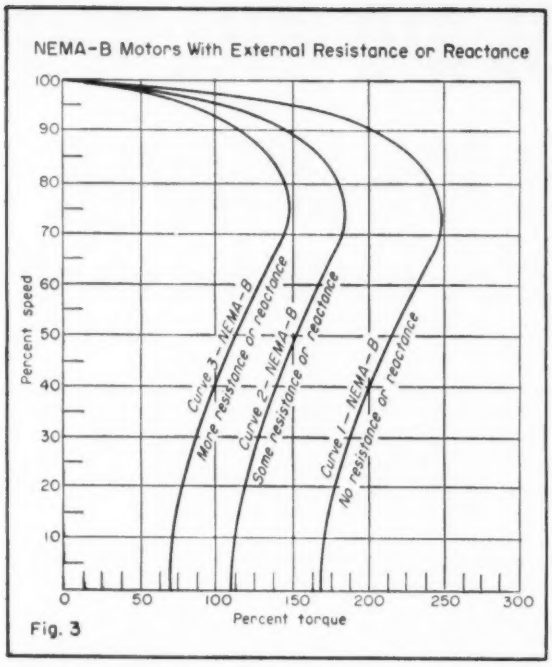
The first requirement in determining the type of drive to be used is a thorough understanding of the machine and process.

The control of acceleration (starting of machines) is important because it affects such things as workloads, quality, and machine maintenance.

Answer Seven Questions To Get Machine Requirements

In determining the machine requirements, it is necessary to have a clear picture of the problems involved. Ask yourself these questions:

1. Does the rate of acceleration mean anything in the economical operation of the machine?
2. Is a slow, smooth break-away sufficient, or does the acceleration need to be slow and smooth from the start to operating speed?
3. How often does the machine have to start?



EXTERNAL RESISTANCE OR REACTANCE added to NEMA-B motors gives special values to the motors to make them ideal for general textile applications. The exact starting torque and, therefore, the exact accelerating torque can be obtained here.

MOTORS

4. Is accurate position jogging involved, and how many consecutive jogs are required?

5. Will the operating speed or load on the machine be changed greatly so that the starting torque will be affected?

6. What is the safety factor required to take care of voltage regulation, temperature changes, or other transient conditions? How important is the safety factor?

7. Is controlled acceleration required to save the machine itself or to save the product?

If controlled acceleration is required to save the machine, use completely automatic controls. If broken ends at starting is the only problem, the operator can usually be depended upon to jog the machine along, and you'll have simple, low-cost control.

To make an intelligent selection of motor, control, and drive, compare the machine requirements with the capabilities of the various available types of equipment.

Since the induction type of a.c. motor fits the needs of most textile machines, let's talk about these motors. The standard squirrel-cage motor costs less than other motors suitable for use in the textile industry and should be used whenever possible.

Take Your Pick of Three Standard Motors

The National Electrical Manufacturers Association—NEMA—has set up a series of standards for squirrel-cage motors. The most common motors of these NEMA types are:

1. The NEMA-B
2. The NEMA-C
3. The NEMA-D

The NEMA-B squirrel-cage motor is considered the standard motor. If no motor specifications are given by the buyer, this motor is generally supplied by all motor manufacturers.

The curve marked NEMA-B in Fig. 1 shows the characteristics of this motor when full-rated voltage is applied to its terminals. You see a starting torque of about 175% of full-load torque, which means that at the instant of full-voltage application this torque or turning effort is available practically in the form of a hammer blow.

The rate at which the machine accelerates depends entirely on how much motor torque is available over and above the friction load and the amount of inertia in the machine to be accelerated.

As the motor accelerates, the torque increases until the pull-out point. At that time, roughly 25% of the rated full-load torque is developed.

From this point upward, the motor accelerates to the point where the load torque and the motor torque cross.

You will notice that the speed-torque curve is flat between 50% load and 125% load. This is a desirable feature in that an almost constant speed is maintained over such load variations.

The NEMA-B Motor Is Usually More Efficient

The NEMA-B is almost always the most efficient motor available. It is also rugged enough to meet most emergency load and voltage conditions. It handles momentary overloads of as high as 250% smoothly.

Although the torque developed along any point of the speed-torque curve varies as the square of the voltage, this motor still has ample torque for its normal load when the voltage drops as much as 10%. At this time, the available torque is only 81% of the full-voltage torque.

Use the NEMA-B motor, with a standard full-voltage starter, in all applications where this amount of starting torque is ample and the rate of acceleration is not important.

Since this motor draws a large starting current, use caution where the time required to bring the machine up to operating speed is greater than 8 or 10 secs., or where starting is frequent.

The NEMA-C motor has a speed torque somewhat higher than that of the NEMA-B. The maximum or pull-out torque, however, is somewhat smaller.

The NEMA-C motor is often misapplied because the motor is not generally understood.

NEMA-C and NEMA-D Motors Are Limited in Applications

The NEMA-C motor is made for applications that require a high breakaway torque but a relatively small amount of inertia to accelerate. There are few such applications in the textile industry. A heavily loaded, slow-moving conveyor belt is an ideal place for a NEMA-C motor.

Never use this motor on applications where a large mass must be accelerated or where a long starting time is required, because its high-resistance winding will quickly

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SUNOTEX RWO-420 Used in spinning suitings, blanketing, carpeting, felts and wool blends.	Retains its outstanding scourability for long periods. The ideal replacement for lard oil—used where surface lubrication of wool is desirable.
SUNOTEX TSO-615 An inexpensive product for processing lower quality wool blends and reworked wool blends.	Has sufficient body to protect fibers. Eliminates fly and static problems.

SYNTHETICS

SUNOTEX RWO-48 A softener and plasticizer for gelatin and other binders in sizing of viscose and acetate yarns.	Provides excellent penetration and uniform plasticizing, resulting in smooth thread surfaces.
SUNOTEX RSO-48 For processing nylon and similar synthetics where static is a problem.	Provides excellent lubrication of the thread surface. It reduces static even when used in quantities of 1% or less.
SUNOTEX TS-48 Trough oil on full-fashioned machines. Also an all-purpose fiber lubricant.	Scours easily from viscose, acetate, nylon and mercerized cotton. Does not stain or develop odors.
SUNOCO FIBRLUB L-220 A nonemulsifying coning oil used in the throwing of nylon for full-fashioned hosiery.	Lubricates the sized threads, reduces "roll," increases snag resistance, prevents corrosion, produces a more uniform stitch.

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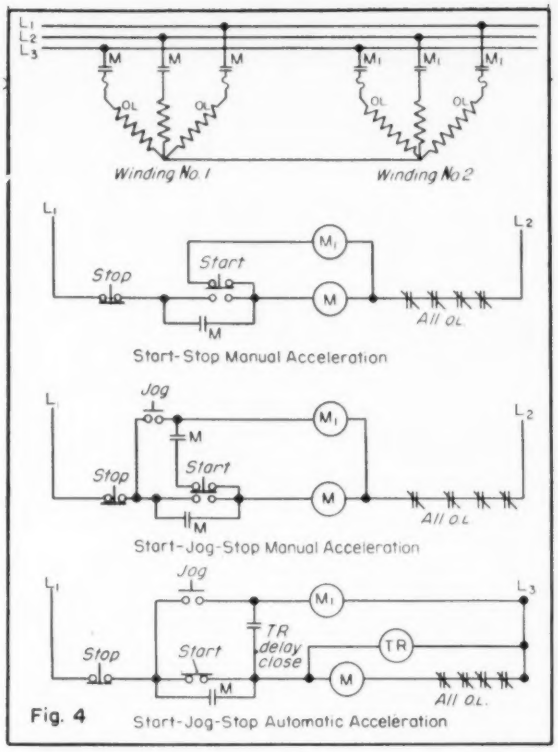

Fig. 4

PART-WINDING STARTING, a recent scheme-control development, provides permanently connected wiring at the wye points. Jumpers are connected to provide any one of three types of motor acceleration, including start-stop manual, start-jog-stop manual, and start-jog-stop automatic acceleration.

overheat. A card is a good example of a machine application where a NEMA-C motor should not be used.

The NEMA-D motor has many uses not fully appreciated. This motor can be applied with good results to feed aprons for pickers, worsted combs, many types of winders, centrifugal extractors, and in other applications where frequent starting or reversing is required.

The NEMA-D motor has a high-resistance rotor winding. This quality produces a high starting torque with a comparatively low starting inrush. The speed-torque curve shows that maximum starting torque is obtained at the stand-still position. The current inrush during starting is about 50% of that of a NEMA-B or -C motor.

The curve of the NEMA-D motor shows that the motor slips at full or normal loads. As a result, the efficiency of this motor is low at steady running.

Consider Soft-Start Motors, But Be Cautious

In many instances, the standard NEMA-type motors do not fill the requirements of textile-machinery drives. The motor designer can, in many cases, build motors with special characteristics to meet the special requirements of machines.

The cotton roving frame is one of the textile machines where the drive must meet exacting conditions. The basic requirement of this drive is that the frame must be jogged along accurately to get the flyers in exact position. At the same time, the rate of acceleration, at least up to half speed, must be slow to avoid breaking roving ends.

If the torque required to start roving frames were always the same, the running load always the same, and the voltage conditions always the same, an ideal squirrel-cage motor could be designed. Unfortunately, such is not the case. The size and number of spindles varies over a wide range, there is a great difference in operating speeds, and the conditions at a given frame vary widely from day to day because of temperature changes, thoroughness of lubrication, voltage changes, frame-alignment conditions, and many other factors.

Two-value and three-value soft-start motors do an excellent job, at the lowest installation cost, when conditions are correct.

Under most conditions, the soft-start motors do a fairly good job of accelerating a roving frame; but there is no excess torque, either starting or running, available for unusual conditions.

If, for example, the frame requires more torque on a cool Monday morning, the frame simply will not start. Under common conditions, soft-start motors operate under close tolerances and may become troublesome.

NEMA-B Motors With Controls Provide Several Torque Values

To completely solve problems such as the one outlined above, use the standard NEMA-B motor with suitable controls. In fact, the NEMA-B motor, if suitably controlled, will provide almost any starting and accelerating torque desired.

By inserting resistors or reactors in the line feeding the motor, you can reduce the speed-torque curve of the motor. The resistance or reactance taps can be adjusted to obtain the exact starting torque and accelerating torque desired.

This type of control requires special and more expensive apparatus; but it makes available, automatically and instantaneously, the full excess capacity of the standard NEMA-B motor.

The starting torque can be adjusted to any value desired on a normal roving frame. At the instant of starting, the desired torque value is applied. If the frame does not start because of interference by some transient condition, the motor will simply wait a few seconds until full voltage is applied and will then be on its way. Within minutes, the condition may be normal again, but there have been no costly delays.

Recently a new scheme of motor control has been used for controlled acceleration that provides advantages over previous methods. This method, the part-winding starting scheme, employs two groups of motor coils connected in two parallel stars.

When part-winding starting is used, the motor torque is automatically controlled to give any torque value necessary for jogging the frame; then the contractor picks up to operate the motor as a normal NEMA-B motor. The motor has all the pull-out and overload capacity of a standard motor.

Furthermore, in case of unusual conditions when a frame does not normally start (such as a stiff frame on a cold morning or low voltage), the motor merely waits until the second contactor picks up to provide the full NEMA-B torque; and the machine starts.

Cotton Cards Need Special Motor Torques for Safety

A cotton card is another textile machine that presents an unusual problem in motor acceleration. To start and run a card with a direct motor drive, a cross between a NEMA-B and a NEMA-D motor is desirable.

The running load of a cotton card is something over 1 hp. A 1.5-hp. motor is always used. A starting torque of about 300% full-load torque should be provided, and

(*Continued on page 268*)

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BETTER DYEING RESULTS
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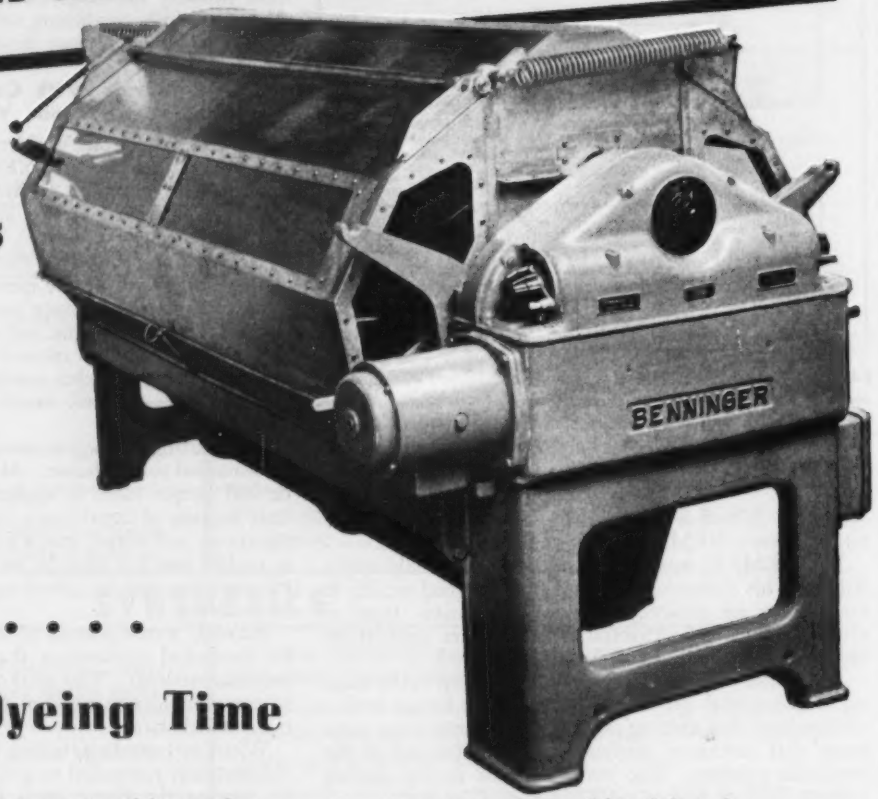

Creaseless Runs on Delicate Fabrics . . . . .

Shorter Dyeing Time

Check the lowered operating costs and increased production of the Benninger Dye Jig against your present dyehouse equipment. Then compare the Benninger Jig's clear, bright colors, its easy matching of shades, its end-to-end and selvage-to-selvage uniformity.

Performance-proved advantages include:

(1) Automatic reversing and stopping device, with self-acting passage counter. Cloth running speed is practically constant. One man can operate six machines.
(2) Adjustable, constant, but slight tension.
(3) Oscillating balance expanding device for creaseless runs on any cloth.
(4) Squeezing device for extraction of fabric before removal from jig. Shortens dyeing time.

Stainless steel enclosure prevents selvage oxidation, cuts steam consumption, eliminates fogging of dyehouse. Easily removable for feeding and unloading.

Open type construction available if desired.

Benninger Dye Jigs handle cotton, silk or synthetic fibres, staple or mixed fabrics. They are made in 51¼", 63" and 75" widths, for all standard requirements. Parts and service are readily available. Let a Butterworth engineer show you how you can step up production, improve quality, in your dyehouse. Write for full details.

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BUTTERWORTH

CAVITOMIC COTTON

May Be Draining Your Profits

WHAT IT IS—Cavitomic cotton is cotton that, for some unknown biological reason, degrades in fiber length and processing characteristics during storage.

WHAT IT DOES—It may lower yarn strength, double ends down, and increase waste.

HOW TO DETECT IT—A pH test is the quickest and easiest way.

HOW MUCH YOU CAN RUN—Up to 15% cavitomic cotton in a mix should not adversely affect processing.

▶ In the 1953 crop there may be more cavitomic cotton than ever before

▶ It is important to know how to identify it and how much you can run in a mix without affecting the running of your mill

By DR. LAURA T. HALL
Kendall Mills

CAVITOMA, a name applied to cottons of middling or better grade and color that become increasingly unstable in fiber length during storage and result in decreased mill efficiency, is important to all who deal with cotton. Such cottons are characterized by a low percentage of reducible material (such as dextrose) and a fairly high alkalinity, and they show evidence of internal fiber damage. At present, cavitoma is of more concern to the mills than to the farmers because the condition is usually not reflected in grade or staple.

Cavitomic Cottons Are Shorter

Early in a cotton season cavitomic cottons average about 3/2 in. shorter than noncavitomic cotton by fiber arrays, although both are called the same staple length by the classer. The cavitomic cottons continue to deteriorate during storage, and the rate is accelerated after March or April. Further staple loss is suffered by cavitomic cotton after 10 or 11 months of storage. The loss is frequently as high as 1/8 in. by fiber array, although still undetected by the classer.

Some cottons show less, others much greater, change than these average figures. The change depends on the degree of damage suffered prior to storage, the weather conditions, and the humidity and temperature during the storage period. The more variable these latter conditions, the greater the deterioration appears to be.

The change in fiber length is not a shrinkage of fibers but evidence of breakage that occurs in cavitomic fibers, even with the mild handling necessary to make an array. This breakage of fibers is presumably the result of an embrittlement or weakening that is not detected as a loss in fiber strength by commonly used methods.

An even greater breakage must take place during processing. The net result, as pointed out in previous publications[1, 2, 3, 4] is impaired mill efficiency, evidenced by increased ends down in spinning, greater waste, and lowered yarn strength.

There is no doubt that the origin of cavitomic cotton is associated with a complex microbiological phenomenon.

Processing Trouble Comes With More Than 15% Present

We have not found processing trouble attributable to cavitoma in mixes having 15% or less of cavitomic bales. In mixes containing from 16% to 30%, inferior processing occurs. The severity depends on the percentage of cavitomic bales, the uniformity within bales, the degree to which it has progressed, and the thoroughness of mixing. Decidedly inferior processing results from mixes containing more than 30%.

How To Detect Cavitomic Cotton

Numerous criteria are necessary to definitely establish a cotton as cavitomic. The most easily performed test is that for pH. All cavitomic cottons that we have studied have been alkaline. We have observed some alkaline cottons, usually with pH values of 9.5 to 10.5, that do not deteriorate in storage. These are the gray or blue-gray weathered cottons in which the quality of the cotton is apparent, and price adjustment is made for it at the time of purchase.

Such cottons do not fall in the category of cavitoma. In a paper on noncellulosic constituents of cotton, Hopper[5] mentioned that some poor-spinning cottons had been found to be decidedly alkaline and that the pH might be useful as an auxiliary indicator of spinnability. He also pointed out that it was thought that molds, fungi, and bacterial growths might have produced the alkalinity.

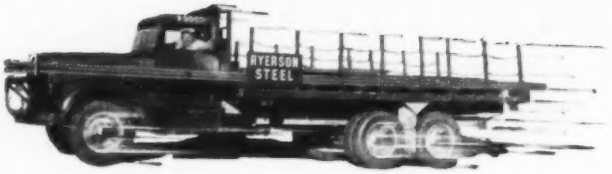
Cavitomic cottons, shortly after ginning, have pH values ranging usually from 7.8 to 8.5. Some cottons retain substantially the same pH during storage, while others decrease nearly to the neutral point, the latter generally showing the greater staple damage. For cottons held in storage beyond 8 or 10 months, pH ceases to be a reliable indicator of cavitoma.

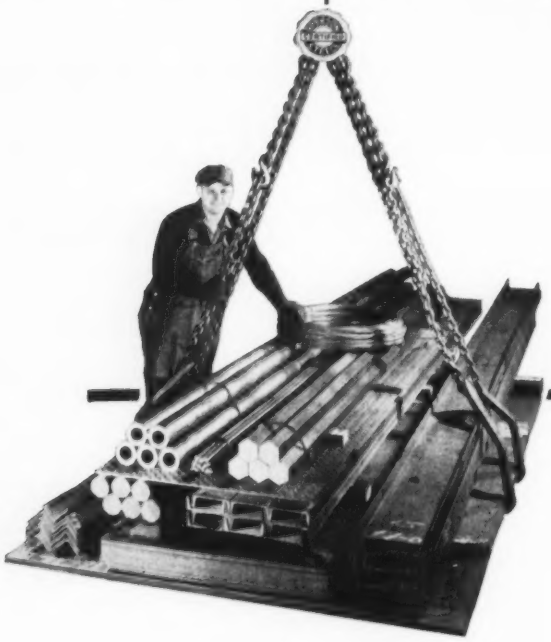
We now use a slight modification of our original method for pH in order to permit testing of several hundred bales daily. A pH meter or any pH indicators that will respond with a series of definite color changes over the pH range 5.5 to 10.5 may be used. Other indicative tests for cavi-

(Continued on page 268)

Based on a paper presented at a meeting of the Textile Quality Control Assn. (now Carolinas Section ASQC) at Clemson College, Clemson, S. C.

For quick delivery





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On the Woolen System--

Review These Ideas For Running NYLON BLENDS

▶ Good blending is the most important process in woolen manufacturing. Fabric price, spinning possibilities, efficiency of the weave room, finishing methods to be used—all depend on good mixing for success.

▶ Carding, spinning, and twisting of nylon blends require specialized techniques in addition to good sandwich and preliminary blending at the pickers.

THE FIRST CONSIDERATION in producing wool-nylon blends on the woolen system is the mixing. Since there are no drawing processes and no repeated doublings, the stock is mixed before and during carding (except for core yarns and ply yarns).

The wool in the mixture must be oiled, but the nylon needs no oil; so the wool should be oiled separately before blending. The wool oil should be of a type that does not injure the nylon and that washes out easily.

Sandwich Blending

The best way to prepare mixtures of wool and nylon is a sandwich blend. As an example, a mixture of 60% reused wool, 20% noils, and 20% nylon staple is shown in the accompanying sketch.

The layers in the mix should be of the same thickness.

If we presume that 1,200 lbs. of the mixture is to be blended, the first layer might contain 120 lbs. of reused wool, the second layer 80 lbs. of nylon, the third layer 120 lbs. of reused wool, and the fourth layer 80 lbs. of noils. This rotation is repeated until all stock is laid down.

Color Mixtures

Wool stock is often mixed for color as well as for material.

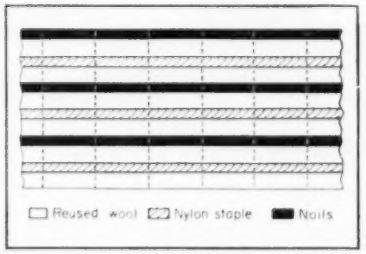
For example, suppose that a mix is to be gray, that the reused wool is black, and that 20% white is needed to get the gray. The logical idea would seem to be to leave the nylon white, since it is more difficult to dye.

However, in spinning, the longer fibers have a tendency to move toward the center of the yarn; so the blend would not look right. In the example given, it would be best to dye the nylon black and to leave the noils white.

Another method should be used in making a mix of 50% wool with 50% nylon. If the mixture is to contain 50% black and 50% white, half the nylon and half the wool should be dyed.

When only small percentages of a color are wanted, the shorter fibers in the blend should be used for these colors. The lightest and brightest colors in general should be used on the shorter fibers of any blend, since these fibers form the outside of the yarn.

Preliminary blends should be made to insure that the mix is what you want.



SANDWICH-BLENDED STOCK should be picked up in across-the-blend segments (dotted lines) for feeding to the mixing picker. This blend contains two parts reused wool to one part nylon and one part noils.

Preliminary Blending

Often a small percentage of nylon staple, say 10%, is enough for a certain purpose. If, for example, a blend of 900 lbs. of noils and 100 lbs. of nylon is to be made, the layers of a sandwich blend cannot be made even enough to assure a good blending of the stock. In that case, a preliminary blend must be made in order to get good results.

This step can be made by preparing a sandwich mix from the 100 lbs. of nylon and 200 lbs. of noils. This preliminary mix is run through the mixing picker, and then a new mix is set up to blend the 300 lbs. of preliminary mix with the other 700 lbs. of noils.

This procedure has the advantage of getting an even mixture; and the stock in the preliminary mix is very open because it is run through the mixing picker twice.

When very small percentages of nylon staple are used (as the white in frosted yarns, for instance) the preliminary mix should be run through the breaker card to promote further mixing and opening. This is a costly process and is used only in extreme cases.

Carding

A good setup, perhaps the most common in America, is a three-cylinder card with an automatic feed, a metallic breast, a first breaker, an intermediate feed, a second breaker, an angle stripper, a finisher, and a tape condenser.

These parts are, of course, all connected and run as one unit; but each carding unit can be separated and the set altered into a one-, two-, or four-cylinder unit if necessary.

(Continued on page 206)

Condensed from "Nylon Technology," First Edition, by Karl H. Inderfurth; published by McGraw-Hill Book Co., 1953.

Another G&K First!

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Spindle Bumper Strap

NOW *Preform-mounted...*

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FREE CATALOG
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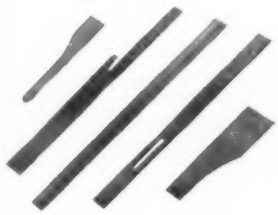
Pickmaster® Pickers do not bounce the shuttle, or cause the shuttle spur to heat up. Assure smooth shuttle flight and accurate boxing.

Condenser Tapes, Comb and Gill Box Aprons, and Grakorub Rub Roll Aprons are producing uniform rovings with less down-time. Made of selected G&K leather specially tanned and accurately fabricated in standard and special sizes.



Boxmaster Binder and Box Plate Leathers of special HAIRITAN® Leather with smooth, catch-free edges and deep, velvety surface. Need no waxes or fillers—do not bleed and discolor the filling yarn.

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2. REDUCE BANG-OFF (Perfect boxing)
3. CUT SHUTTLE COST (No hot spurs)
4. INCREASE PROFITS

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RESEARCH® **premium quality special tannage**
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T-5

Keep Up LOOM ASSIGNMENTS By Keeping Down End Breakage

▶ All weaving factors determine loom assignments, but after a loom assignment is set up on the basis of an end-breakage standard, an increase in end breakage plays havoc with efficiency and production. A nomograph demonstrates the effect of an increase in stops per loom hour.

By JOHN E. ALLEN

THE NOMOGRAPH HERE was compiled to show the relationship of loom stops to loom assignment. All factors (walking, piecing, inspecting, etc.) must be taken into consideration when loom assignments are set up, but stops per loom hour regulate changes in assignment because all other factors are treated as constants. The importance of maintaining the end breakage on an assignment is not always fully realized. If the end breakage gets too high, the weavers work harder for less pay, the efficiency drops, and the weave-room costs go up.

Time Allowances Made In Calculating Nomograph

The nomograph is based on a 40-hr. week with different percent operating times; for instance, 85% operating time means 15% rest time, and it means that a weaver works 2,040 mins. out of the 2,400-min. work week. It is for weavers on plain looms who do not fill batteries. These allowances were made for the conditions in one mill and are not intended to be a guide to making time allowances.

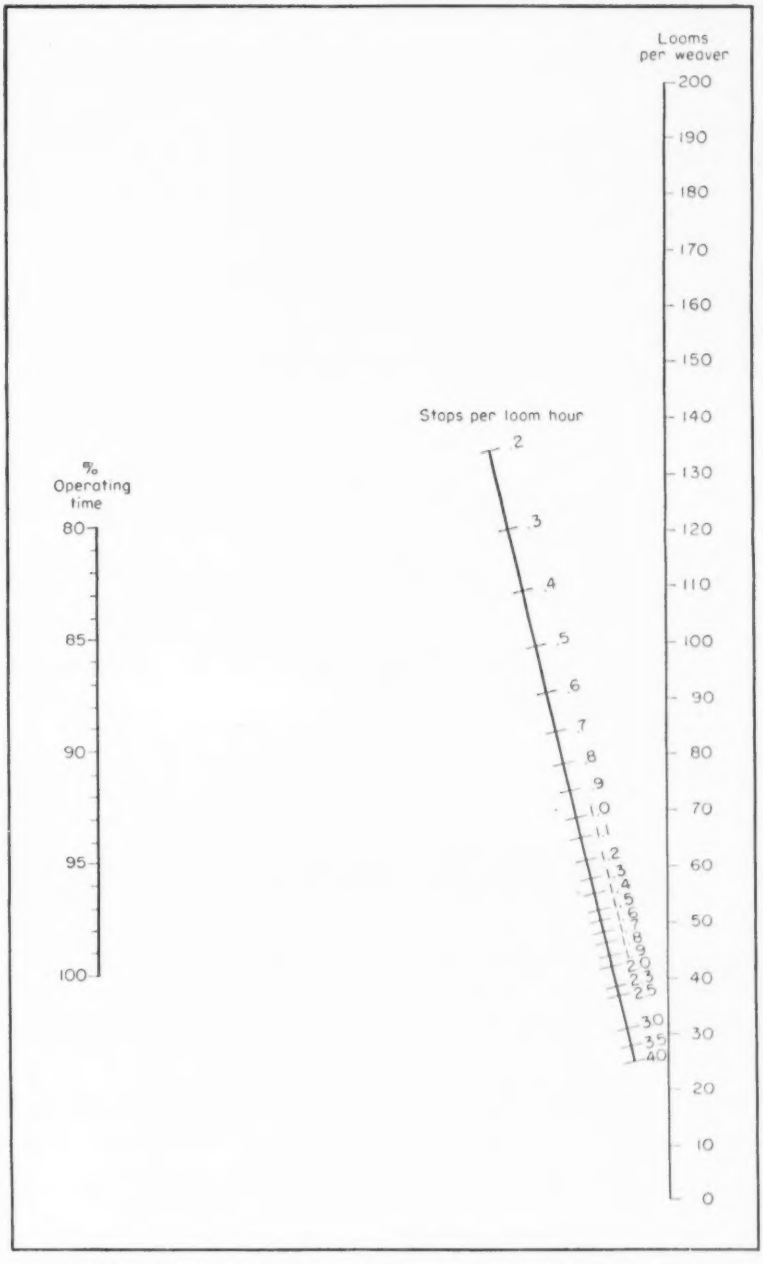
Piecing: 35.6 secs. per break.

The piecing allowance was taken from many studies on plain looms doing two-harness work.

Walking: 7.2 mins. per loom per week.

The nomograph is based on walking three cycles front and three cycles back per hour, which is 1,280 ft. per loom week; walking rate is 176 ft. per min. The figures were taken from walking-cycle studies that averaged 1,228 ft.

(*Continued on page 220*)



THIS NOMOGRAPH shows the number of looms a weaver can handle at a given percent operating time and stops per loom hour. The points for the stops per loom hour allow for all the various time elements. (Stops per loom hour is the variable.) Use a ruler to find the looms per weaver.

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The Lube that was "Tailored" for Textile Mills! Here's what we mean by lubricants "engineered to fit the job": awhile back, the Engineering Department of a well-known mill asked us to develop an oil that would meet their exacting loom lubrication requirements. After intensive study of the problem, we came up with Tycol Amortac 76. In actual loom usage, we *proved* Amortac to be easy to handle and virtually "splatter-proof," even when looms are being blown down. Result? An oil that features initial low cost . . that by itself satisfies complete loom lubrication requirements (no chance of a lube mix-up!) . . . minimizes 'seconds' . . . will not build up with lint while feeding through the bearing opening. In every way, Amortac 76 is engineered to do a specific job. One reason why it pays to consult your local Tide Water Associated office . . . first!

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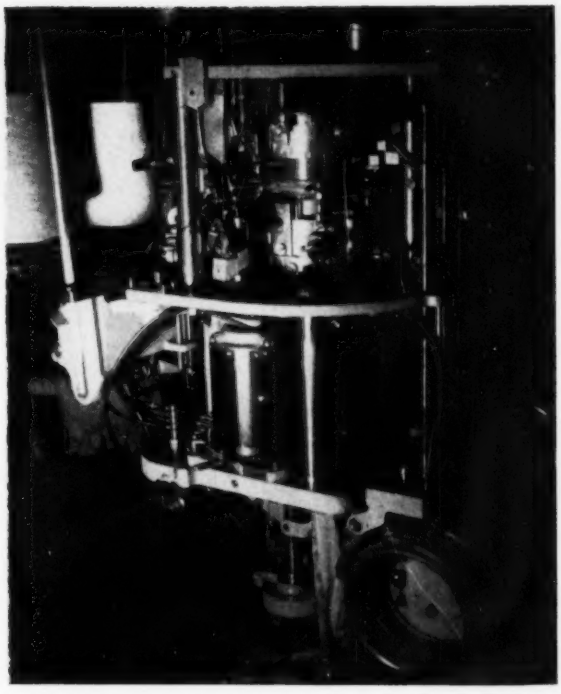
DOUBLE SOLE of the two-sole sock is cut away to show the two distinct pieces of fabric with one smooth side facing the foot.



TWO-SOLE socks with argyle-plaid insteps and solid-color foot bottoms are made on this Bentley Komet J.L. machine.

How Southern Hosiery Mill, Inc. Knits TWO-SOLE SOCKS

▶ A new principle of knitting is used to make two-sole socks on Bentley Komet J.L. machines with special attachments. Two separate pieces of fabric are made along the sole and joined together along the instep.

▶ The outersole is knitted at the front feed on the needles in the bottom cylinder, while the innersole is knitted at the same time at the back feed on the needles in the top cylinder.

By **JAMES H. BLORE,** Assistant Editor, TEXTILE WORLD

Southern Hosiery Mills, Inc., Hickory, N. C., has converted Bentley Komet J.L. machines to make two-sole socks. All new J.L. machines received by this company incorporate the two-sole attachment.

The outersole is knitted on the bottom needles at the front feed while the innersole is being knitted on the top needles at the back feed.

How the Sliders Are Set Out

Odd sliders in the bottom-cylinder heel section have long butts, and odd sliders in the instep half have medium-length butts. The even sliders in the bottom cylinder do not have transfer butts.

After the heel is knitted, the bottom transfer cam is pushed in to send the needles with long transfer-butt sliders to the top cylinder. The front-feed welt bolt is pushed in halfway so that selected long-butt sliders in the instep half send down their needles to knit the instep design. The short-butt needles in the top cylinder ride through the front-feed welt track and hold their stitches but take no yarn.

The reverse-welt bolt cam is withdrawn, and an extra lever on the front pattern unit causes the sole needles to pass under the back stitch cam. The instep needles are selected to knit in the normal manner.

This method of knitting allows the top- and bottom-cylinder needles to knit the design or rib in the instep. The solid color of the outside sole depends on the threading up of the front feed. The back feed is threaded with white yarn if a white innersole is desired.

Where designs are made in the in-

(*Continued on page 196*)

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color

The CROSS MILL will match your shade or you may select from more than seven hundred shades now shown in the CROSS color catalog. In addition, the CROSS laboratory has on file the formula for more than two thousand shades.

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▸ **The wide choice of fast colors now available in Dynel, acetate, viscose, and casein fibers and yarns has given the designer a new set of tools.**

▸ **Here's what to expect from Dynel, Celaperm, Chromspun, Fibro, and Merinova.**

New Techniques With COLORED FIBERS Make New Fabrics Possible

By **GEORGE M. MOISSON,** Assistant Editor, TEXTILE WORLD

THE "LOOM-FINISHED FABRIC" idea has been stimulated by a growing public interest and by the availability of dope-dyed yarns. In theory, at least, the fabric that requires no wet finishing is the most economical fabric to weave.

New warp sizes that don't water spot and are dry cleanable have opened new uses for taffetas and some other fancy goods formerly adaptable only to drapes and expensive evening gowns. The range of colors and fabric effects now available with staple and continuous-filament dope-dyed fibers is actually unlimited. Dye streaks, poor penetration effects, rope marks, rub marks, and undesirable moire effects can be avoided. Staple acetate is also being used to give unusual effects in cotton blends, both warp dyed and stock dyed.

Once made, however, loom-finished fabrics are subject to the whims of fashion. A lot of money can be tied up in goods that won't move. The women's-wear market does not lend itself to long-range planning, but a smart stylist can see far enough ahead to allow modest stockpiling by the mills.

A semifluid range of fabrics can be planned, however, if a mill has piece-dying equipment and a finishing range. A number of possibilities open up when goods are designed with foresight. Goods can be designed with an eye to the possibility of overdyeing or cross dyeing if the market isn't receptive.

With 19 colors in filament and 9 colors in staple Chromspun (Eastman); 15 colors in filament Celaperm (Celanese); 20 colors in staple Merinova (Snia Viscosa); 14 staple colors in Fibro (Courtaulds), and an undetermined number in Dynel (Carbide & Carbon)—all available in quantity and only a little more expensive than their uncolored equivalents—the designer has unlimited scope.

Each Fiber Has Limits

The Acetates

Before examples are given, the possibilities and limitations of each fiber type must be understood.

"Dope-dyed" is TEXTILE WORLD's choice for a generic term to describe briefly and expressively the colored fibers produced by extrusion of a colored melt or solution.

Fiber producers have not yet selected a standard term. A few of the terms in use are: "spun-dyed," "solution-dyed," "dope-dyed," and in one case merely "colored." *Round Table* invites comment on our choice of words.

Celaperm and Chromspun are acetate—exactly the same as acetate supplied uncolored. The color in these fibers is built in before extrusion. All existing color tests have proved beyond argument that this method of coloring is equal to if not better than any other.

But these things must be remembered: Celaperm and Chromspun are not undyeable in the sense that resist-dyed acetate is; in blends that call for cross dyeing of a wool component, judicious choice of acid dyes will leave the acetate unharmed. Faulty procedure or careless choice of dyes can cause extreme modification of the dope-dyed colors.

In blends with viscose or cotton, the cross-dye procedures must forego vats because resultant saponification will cause the dope-dyed yarn to dye as viscose; a very wide range of color possibilities exists in this blend, however.

A most interesting effect can be obtained with a blend of dope-dyed staple and undyed acetate staple. Light and medium shades can be overdyed on the white staple without much change in the color of the dope-dyed stock. Beautiful two-tone effects can be made by this procedure. A note of warning here, however: overdyed Chromspun or Celaperm will have the fastness properties

(*Continued on page 196*)

..... A neat trick—for finishers of shreinered, embossed or frictioned fabrics

RESIN DJ dives into fabrics, penetrating so deeply that a desirable hand is retained without the excessive use of softeners. Resin DJ is especially useful in permanent glaze, fabric stabilization and crush resistant work. It is a UF condensate soluble at low temperatures.

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COMBINING the penetrating qualities of Resin DJ with the surface finish of Firmel makes an efficient and very economical formula that lessens fabric deterioration and eliminates resin build-up on rolls. You will find these resins very easy to handle. They are delivered fresh, keep well and dissolve readily at low temperatures. For test samples, write BRYANT CHEMICAL CORPORATION, N. QUINCY 71, MASS. or Box 2301, SPARTANBURG, S. C.

Brytex PRODUCTS

Pointers FOR SUPERVISORS

What the Supervisor Can Do About Labor Turnover

▶ Do you realize how much your own job is affected when your workers quit? If you study the problem, you'll see that you can do yourself a good turn by helping your company develop a more-stable work force.

By **MARION J. WISE, JR.,** Assistant to the Vice President in Charge of Personnel and Industrial Relations, Erwin Mills, Inc.

THE AVERAGE SUPERVISOR may not be very much aware of labor turnover in his department and may not think it is important if he is aware of it. But high labor turnover can do more to increase his workload and destroy the showing of his department than is apparent.

Let's define labor turnover before we discuss its causes and cures. The rate of labor turnover is the number of voluntary quits divided by the average plant population for the period, multiplied by 100. Only voluntary quits are used, since the company can control the number of employees it discharges or lays off. Voluntary quits are inaugurated by the employee and can only be indirectly controlled by the company's efforts to eliminate the causes of turnover. Also, if labor turnover is figured by the month, the yearly rate is cumulative rather than an average.

Turnover is much more expensive than the average supervisor, or even executive, imagines. It is a very low estimate to say that every employee takes the equivalent of $50 of company money with him when he quits. This $50 consists of not only the cost of hiring him, putting him on the payroll, and taking him off, but also the time spent in training him, the interference with the work of skilled employees, and, most important, the lag between the time he is hired and the time he reaches full productivity.

Multiply each voluntary quit by this figure and you will have a rough idea of what labor turnover costs your department in a year. And all supervisors know how much of their time is spent training new employees that might better be devoted to other aspects of their jobs.

The first thing to do in lowering the rate of turnover is to find out where it is happening most frequently. A statistical study of turnover by occupations, departments, shifts, length of service, and male and female employees will give a great deal of useful information.

We can find out if it is new or old employees who are leaving and which jobs and which shifts are most unpopular. We can also compare turnover by departments; and sometimes, in this way, we can spot heavy turnover due to supervisory weakness.

In a multiplant operation, it is best to check turnover figures for the different plants against the national average for the industry rather than one plant against the other. Conditions within the plant and in the different communities may not make a comparison between plants of the same company very valuable.

Having found out where turnover is, we can now proceed to the more important fact: Why is it?

It is generally agreed that labor turnover is higher in good times than in poor. Such eminent economists as Sumner Slichter of Harvard make elaborate studies to prove factually what we all know intuitively: that people quit jobs more readily in good times, when other jobs are available, than in times of depression. In fact, many experts believe that people leave jobs because of the ease with which they can get another just as good rather than because of dissatisfaction with their present job. Since we can't wait around for another depression to help cut our labor turnover, we'd better find out what is causing it and try to cure it.

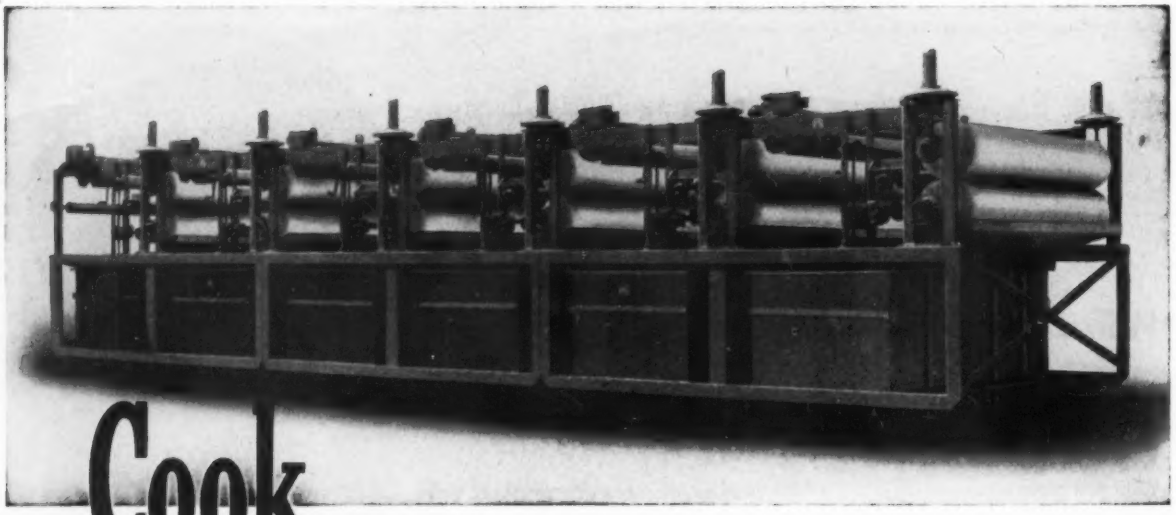
Nearly everybody who voluntarily leaves a job does it for two reasons: a good reason, which he uses to convince himself and which he readily tells his supervisor, and the other or real reason, which he may only dimly recognize himself and which it may take time and skill to find out.

The best way to find out the real reasons why people are leaving our plants is to conduct a termination interview with every employee who voluntarily quits. The best way of making sure all voluntary quits are interviewed is to let the termination interviewer give the employee his final check.

Now, a termination interviewer is an entirely different animal from the employment interviewer. The employment interviewer is chiefly concerned with getting facts—where the employee worked before, etc. The termination interviewer is more concerned with attitudes—what the employee thinks of the company, its policies, his wages, his training, his supervisor, etc.

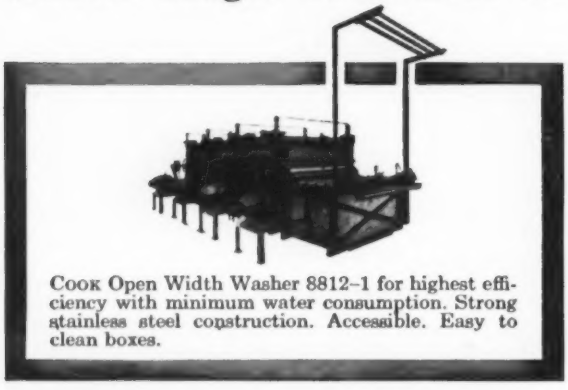
The interviewer generally puts the employee at his ease by reminding him that he no longer works for the company and can therefore speak his piece without fear or favor. Many employees welcome the opportunity to say what they actually think of the company and the people who work for it.

(*Continued on page 186*)



Cook P&N 100" face WASHER

allows single or double stranding without rethreading

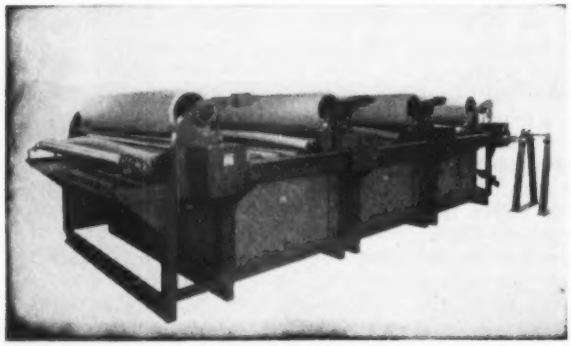


Cook Open Width Washer 8812–1 for highest efficiency with minimum water consumption. Strong stainless steel construction. Accessible. Easy to clean boxes.

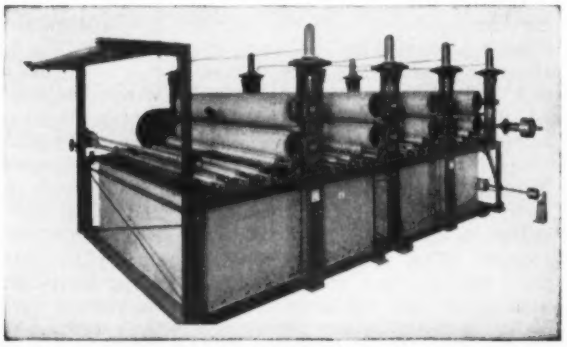
This Cook style D 100" face Washer 5786–1 is designed for rigidity and convenience of operation. Fabricated steel throughout and supported by I beams running across the machine making the complete machine one integral unit. Tanks are of stainless steel designed to be removed from the machine without disassembling any other part. Guide rolls are skyed for more complete washing. Preceding each nip is a single and a double expander preceded by an adjustable roll which allows single or double stranding without rethreading.

All Cook machinery is fabricated in our own shops allowing design flexibility *without* premium cost. Stainless steel fabrication eliminates broken castings and factory-made repair parts. All machines are guaranteed to perform as specified.

Your request for information will receive prompt attention.



COOK 100" Face Washer 8856-1 is strong without excessive weight. Tanks made to fit your usage. Completely equipped with self-aligning ball bearings. Weight and lever, pneumatic or micro set pressure available. Side shaft drive shown; others are arranged with individual nip drive. Made in all widths.



COOK Crabbing Machine 6401-2 or Washer with stainless steel tanks supported by rigid frame of stainless steel which also mounts the guide rolls, squeeze rolls, tension device and roll-up. Two to ten tank machines for widths of fabrics. Each tank has four immersion rolls running in rubber or graphalloy bearings.

COOK-P & N MACHINE CO., INC., 365 Dorchester Ave., Boston 27, Mass.

Exploring

The Textile Community

This Company Newspaper Helps the Mill Community

▶ Civic projects, as well as mill news, get coverage in this publication. As its editor explains, employees are also citizens and voters, and the paper recognizes their broader interests.

By MILDRED BARNWELL ANDREWS

When *Textiles Review* was born in January, 1946, it was destined for a long, successful run.

It had a guaranteed circulation because it was the company paper of Textiles-Incorporated, Gastonia, N. C., the largest producing company spinning combed yarns. And *Textiles Review* was lucky enough to have Everett Jones as its editor. An energetic young business man of Gastonia, interested in civic affairs, he had conducted the page of veterans' chit-chat sponsored by the American Legion in the local paper. That modest journalistic experience, plus a whale of a lot of gumption, spirit, imagination, and a civic-minded attitude, have produced in Jones one of the ablest company-paper editors in the field. He has molded *Textiles Review* into a powerful influence in the community, as well as an interesting and informative news sheet.

TEXTILES REVIEW
FOUR PLANTS RECEIVE SAFETY AWARDS
TEXTILES REVIEW
Albert G. Myers Scholarships And Student Loan Fund Announced By Company
TEXTILES REVIEW
Gaston Tech Offers Engineering Courses
School Bond Election May 23
TEXTILES REVIEW
LIFE SAVING CREW STARTS FINANCIAL CAMPAIGN
G. H. S. AGAIN WINS STATE BASEBALL TITLE

THESE FRONT PAGES of *Textiles Review* reflect the variety of subjects the paper covers. Community projects rate space along with sports, personnel features, and company news.

By Employees, for Employees

It is a paper with a mission. *Textiles Review* is for the employees, prepared by the employees, and free of any company propaganda.

Textiles Review has been published every two weeks for nearly eight years. Each of the more than 3,000 employees of Textiles-Incorporated's 11 mills receive a copy, free of charge, on the same day. Each distribution day a copy is sent free to every man or woman in the armed services who is a member of a Textiles-Incorporated family. More than 200 such "subscribers" are on the mailing list, and all papers to overseas personnel go out air mail. Usually Textiles-Incorporated boys now in Korea are reading the *Review* just four or five days after publication.

The human-relations element is strong in the policy structure of *Textiles Review*. The paper furnishes addresses to those in the service who have lost contact with their friends from home who are also in some branch of service. Through its reporters the paper keeps in touch with employees or members of their families who are ill at home or hospitalized. "Get well" cards are sent with a cheery note of interest.

Each Mill Is Represented

But after all, it is a newspaper and it prints news. A paid reporter, usually someone from the spinning room or office at each of the company's 11 plants, keeps news about personnel flowing. Each mill's column in the Review is distinctive. We read the

(*Continued on page 240*)

ALEMITE OIL-MIST

saved $2400 first year

...extended bearing life from

20 weeks to one year and four months

Textile mill breaks bottle-neck, cuts Down-Time, ups Production

Bearing temperatures on an important blower were running 200°. Bearings burned out frequently. Production losses totalled $1000 with each failure. Mill output lagged with down-time for repairs. Here was a bottle-neck that had to be broken! Management turned to Alemite lubrication. Installed an OIL-MIST unit costing little more than a hundred dollars. *Result*: Bearings are still operating with no failures to date—after one year and four months. $2400 has been saved, down-time has been eliminated and production increased!

Compare all these OIL-MIST advantages with ordinary methods!

- Reduces bearing temperatures as much as 20%
- Continuous, uniform lubrication of all types of bearings
- Air pressure seals bearings against dirt
- Reduces oil consumption—up to 90%
- Prevents product spoilage
- Eliminates guesswork—each bearing picks up as much OIL-MIST as it needs
- Reduces starting and running torque.

Facts prove this *"Friction Fighter"* most efficient, continuous, fully automatic lubrication system

All industry looks to Alemite for the latest, most advanced lubrication methods. OIL-MIST, Alemite's great lubrication development, is the famed system that *atomizes* oil into mist—distributes it through tubing to bearings—bathes all bearing surfaces with a cool film of clean, fresh oil. Here is the system that simplifies and materially cuts the cost of machinery lubrication. With no moving parts, the lubricator is the last word in efficiency.

Job Proved and thoroughly tested in hundreds of applications in every phase of industry, OIL-MIST uniformly maintains oil film on plain and anti-friction bearings, gears and chains, despite variations in load, temperature or speed. Don't you owe it to *your* business to learn all about Alemite OIL-MIST—*today*?

ALEMITE OIL-MIST Lubricates All Types of Mechanisms

Alemite OIL-MIST Lubrication

A PRODUCT OF SW STEWART-WARNER

Get the facts NOW!

Alemite, Division of Stewart-Warner, Dept. J-103
1850 Diversey Parkway, Chicago 14, Illinois

☐ Please send me a FREE copy of your new and complete OIL-MIST catalog.

☐ Please have your Alemite Lubrication Representative arrange a desk-top demonstration of OIL-MIST. This entails no cost or obligation on my part.

My name .....

Title .....

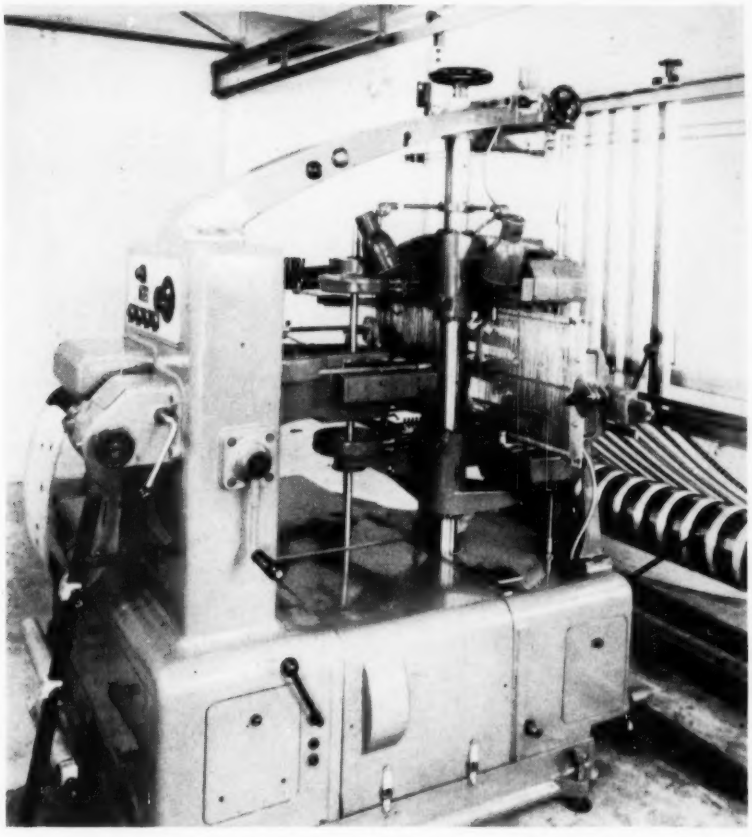
Company .....

Street .....

City ..... State .....

TEXTILE Equipment NEWS

Automatic Drawing-In Machine Requires No Special Heddles



USTER DRAWING-IN MACHINE handles regular heddles at 40,000 ends per 8-hr. shift. Delivery to the U. S. is expected in about 18 months.

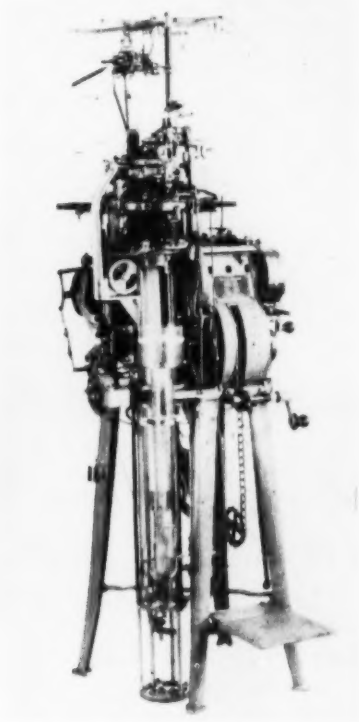
An automatic drawing-in machine that does not require special heddles has been announced by Zellweger Ltd., Uster, Switzerland. According to Zellweger, the Uster drawing-in machine will be ready for delivery in the U. S. in about 18 months. It will be handled by Uster Corp., Charlotte, N. C.

Some of the features of the machine are:

1. Operates with ordinary heddles (round, flat, or duplex) of almost any normal length.
2. Changing from one heddle size or type to another takes 15 to 20 mins.
3. Draws patterns requiring up to 28 shafts; drawing in complicated patterns is controlled by ordinary punched cards.
4. Handles warps of all materials, spun or filament, if the warp has an end-and-end lease.
5. Draws up to 40,000 ends per 8-hr. shift, and no special operator skill is required.

Circle T-1 on Reader Service Card

S&W Is Producing a 474-Needle Circular Machine



S&W 474-NEEDLE CIRCULAR MACHINE is the same as the 400-needle machine except for a completely automatic take-up device and the size of the knitting elements.

A 474-needle 3¾-in.-dia. circular knitting machine has been put into production by Scott & Williams Co., 350 Fifth Ave., New York, N. Y. The new machine uses 80-gauge knitting needles as opposed to the 75-gauge circular knitting needles used on the 400-needle machine.

A feature of the 474-needle ma-

chine is a completely automatic take-up device that gives the proper tension to the fabric as it is knitted. The tension can be set for any desired amount by changing the weights on the gravity device.

The new machine will be in short supply for some time, but 400-needle machines can be converted to 474-needle machine by installing new cylinders, dials, and take-up devices. These parts will be in greater supply than the complete machines and cost about $700.

If these parts are purchased separately to convert old machines, new machines, as they become available, can be supplied without these parts; then the 474-needle elements can be put in the new machines and the 400-needle elements can be returned to the old machines. This arrangement enables a mill to switch production to the new circular gauge but maintain its 400-needle production facilities.

THE 474-NEEDLE CYLINDER, plus the dial and take-up device, can be purchased separately to convert 400-needle machines to 474-needle machines.

Circle T-2 on Reader Service Card

TW has been peeking . . .

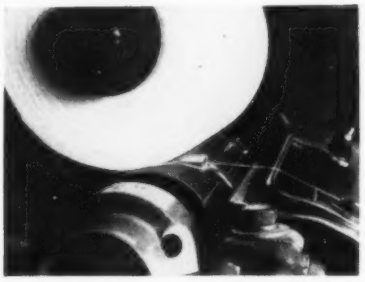
behind the curtain of the April Textile Exhibition

Here's what we saw that you might be looking forward to:

- ▶ Crompton & Knowles Loom Works plans to exhibit its W-3A all-purpose worsted suiting loom, arranged for 4x1, 4x2, or 4x4 box work and including a four-color stationary magazine.
- ▶ Draper Corp. will concentrate on six looms: one each for weaving wide sheeting, synthetics and blends, heavy cottons, twills and semi-fancies; and two for weaving print cloth. These looms will feature improved mechanisms and parts in general construction, drive, harness, and in several other areas.
- ▶ Saco-Lowell Shops will exhibit its SG-1 Gwaltney large-package spinning frame.
- ▶ Universal Winding Co. is expected to base its exhibit on the theme of the application of its present and new machines to the many and varied new synthetic fibers now coming into commercial production.
- ▶ Whitin Machine Works feels there are at least 10 good reasons why mill men should visit the Exhibition next April, because it is showing its new Roto-Drafter and nine machines of other types—all advanced from the standpoint of development and design.

Watch this panel each month for more peeks at the equipment to be shown at the American Textile Machinery Exhibition in Atlantic City next April 26-30.

New Thread Guide For Foster Winder



NEW THREAD GUIDE for winding dye tubes is said to eliminate hard ends and cobwebbing.

A close-delivery guide for tube winding on the Foster 102 winder has been made available by Foster Machine Co., Westfield, Mass., after tryouts in a number of mills. The guide delivers yarn to the nip of the roll. By preventing lash at the end of the package, it eliminates hard ends and cobwebbing and is said to be particularly suited for winding dye packages. An auxiliary thread bar is used.

Circle T-3 on Reader Service Card

Sprinkler Has A 20-Ft. Effective Spray

THIS FIRE-PROTECTION SPRINKLER has a radius of 20 ft. of effective spray. It does not spray against the ceiling because fire tests have shown that water deflected off the ceiling falls in coarse drops or streams and loses its maximum cooling effect. The fixture is available in upright or pendant models from Automatic Sprinkler Corp. of America, Youngstown, Ohio.

Circle T-4 on Reader Service Card

SERVING THE TEXTILE INDUSTRY SINCE 1899

Precision Paper Products

SONOCO TUBES

For Every Textile Need . . .

Sonoco produces spiral, convolute, parallel or drawn tubes in sizes from ⅛" to 36" I.D., in any practical length and wall thickness. Available in colors, various surfaces, treated, impregnated, perforated, scored, notched, printed, with crimped or burnished ends. Over 50 years' experience enables us to help you with any problem that can be solved with a paper tube.

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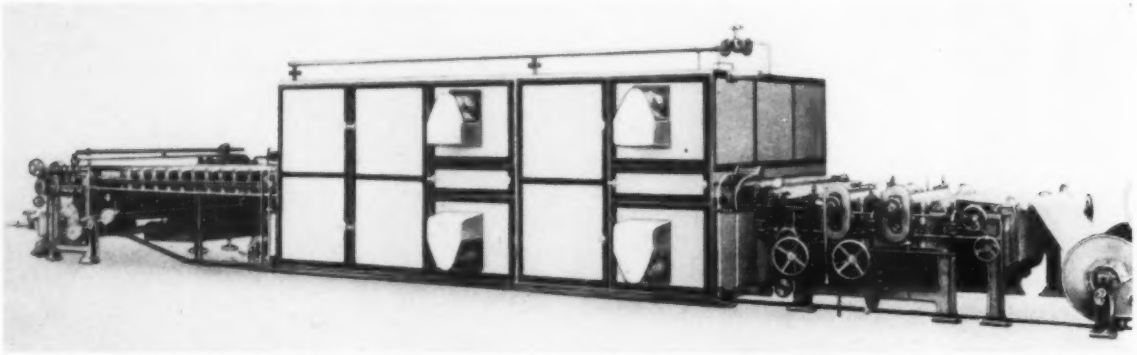
TEXTILE *Equipment* NEWS

Slasher Dryer Dries Warps With Superheated Steam



SLASHED WARPS ARE DRIED with superheated steam in this new slasher dryer. No guide rollers are used and the warps are said to retain their elasticity and size distribution.

A new slasher dryer that is said to work with the shortest possible warp length (three to nine meters) in the drying chamber has been developed by Gebruder Sucker, EmbH., M. Gladbach, Germany. The machine is said to be effective for slashing bleached and multicolored warps, warps of delicate fibers such as linen, and sample warps.

This new-type sizing dryer, Model PT, works with a mixture of superheated steam and air. The dryer consists of one or several short conduit-type drying systems; in each of these systems, blowers draw off the moisture as saturated steam. This saturated steam, which contains a small amount of air, is conveyed through heaters and superheated. When pressure equalization is reached, this superheated steam is reintroduced into the system as a counter current. The yarns are carried through between the two currents of superheated steam.

The superheated steam becomes saturated quickly on contact with the warp yarns, and a uniform and fast drying is obtained. At the end of the drying conduit, the saturated steam is drawn off and the cycle starts again. Excess saturated steam escapes automatically.

When the machine is operated very slowly, the circulation of the drying agent is reduced to prevent overdrying. When the machine is at a standstill, the superheated steam is shut off and cold air is sucked in to cool off the warp yarns.

This new system has demonstrated these advantages.

1. Since no guide rollers are used, the warp yarns retain their elasticity, the size remains uniformly distributed, and the yarns divide smoothly at the lease rods.
2. Because the drying agent flows across the yarns at a high speed, the machine gives a good lay and adhesion to fuzzy filaments.
3. Because the drying agent is reused, steam consumption is low—1.2 to 1.4 kg. of steam per kilogram of evaporated water.

Circle T-5 on Reader Service Card

Temperature Controller Said To Give Close Control

THIS TEMPERATURE CONTROLLER uses one vacuum tube for amplification. Full power is used only on the initial temperature upswing.

The West Instrument Corp., 525 N. Noble St., Chicago 22, Ill., offers a temperature controller that is said to give unusually close control. The West Stepless controller has no relay, and it supplies only enough power to the heating element to hold the appropriate temperature. Full power is necessary only on the initial temperature rise. The true temperature is indicated on a 5-in. scale, which is mirrored for parallax correction.

Two sections make up the complete controller, except in the higher capacity units that require intermediate amplification. One section contains the temperature indicator, parts of the control circuit, and the pilot lights, and the other contains the heavier parts of the controller circuit. A conductor cable connects the two sections. A separate indicator unit facilitates panel mounting.

Two pilot lights are built into the indicating section of the controller. A green light indicates that power is applied to the controller, and a white light indicates, by its brightness, the degree of power supplied to the heating element of the unit being controlled.

One vacuum tube is used. This tube is a standard television service tube, 6BL7-GT, which is available at TV and radio service shops.

Circle T-6 on Reader Service Card

Let's talk VOLUME

Whether you short-cut your hosiery finishing for greater volume, or stand by conventional preboarding and finish boarding processes, you still need a Turbo to give your stockings their best start toward sales appeal. And . . . a Turbo AD-48 will give you an extra benefit. It's a dual purpose machine that will either preboard or finish board.

Gentle as a lamb, a Turbo treats your finest fabrics with all the gentle care they deserve. There's no jolting or banging to injure delicate threads, operation is as smooth as greased nylon. Forms remain upright at all times, stockings *stay* in place. Dressing and stripping are done by hand, by *one* operator; all other operations are completely automatic. A Turbo finished stocking never gets "overdone." Even, correct temperatures are dial set and timing is automatic. Set it — forget it — a Turbo needs no attention.

With proven production records of 120 to 130 dozen pairs of perfectly finished, static-free stockings per eight hour day you can be certain of quality volume. There's more you should know — write today for full information on the complete Turbo line of hosiery finishing machines.

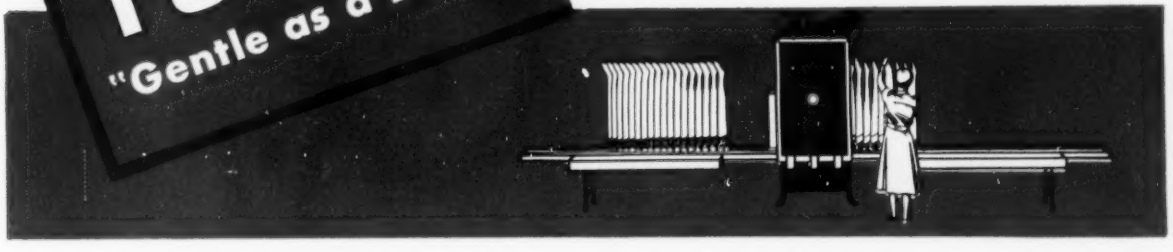
TURBO MACHINE COMPANY

Lansdale, Pennsylvania, U.S.A.

Southern Rep.: F. W. Warrington Co., Charlotte, N. C.

TURBO

"Gentle as a Lamb"



 For more information, write direct or use Reader Service post card.

Quilling Machine Handles All Yarns and Yarn Sizes

THE SINGLE-SPINDLE QUILLER operates with any kind of yarn and the full range of numbers and deniers. The feed hopper is filled by the handful. Pin-boarding device is optional.

QUILLING 30-DEN. NYLON at 12,000 rpm. is one application of the quiller. For finer yarns, the feeler wheel can be replaced with a feelerless regulator.

A single-spindle quilling machine has been introduced by Muschamp Engineers Ltd., Ashton-Under-Lyne, England.

The Muschamp SS.100 was not designed with a particular branch of the industry in mind. Three typical applications of the quilling machines are: winding 45s cotton at 7,000 rpm. (quilling time 35 secs.), wool on automatic-loom quills at 8,000 rpm., and 30-den. nylon at 12,000 rpm. (10.8 wind). It is a fast unit, requires little floor space, and works under clean or dirty conditions.

The yarn is traversed by a guide moved by contact with a small three-point cam, which advances forward alongside the quill as the guide advances. The three-point cam slightly displaces the mean position of the traverse every three revolutions; so the later coils bind the earlier coils and prevent sloughing off. Traverse length is changed by a simple adjustment of the cam, which has four levels along which the bowl of the traverse can run.

Three kinds of diameter control are available: a completely feelerless regulator, a special feeler builder motion, or a combination of the two.

The feelerless regulator is recommended for delicate yarns. The feature of the Muschamp feeler builder motion is that it is impossible for the feeler wheel to loose contact with the quill. The third type combines some of the advantages of both systems.

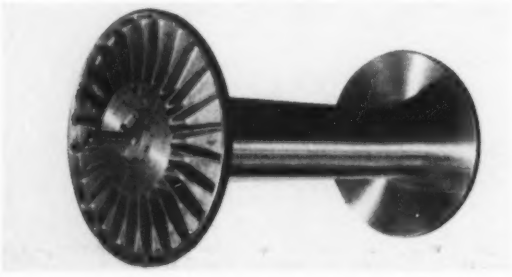
The hopper accepts quills dropped in by the handful and feeds them to the spindle as required.

The stop motion is controlled by a light bar running along the length of the winding position. The tensioners vary with the type of yarn. For nylon and other synthetic yarns, Kidde compensators have been adopted as standard.

The machine can be equipped with an automatic pin-boarding device or with a collecting box.

Circle T-7 on Reader Service Card

Aluminum Beam Was Designed Specially for Synthetic Yarns



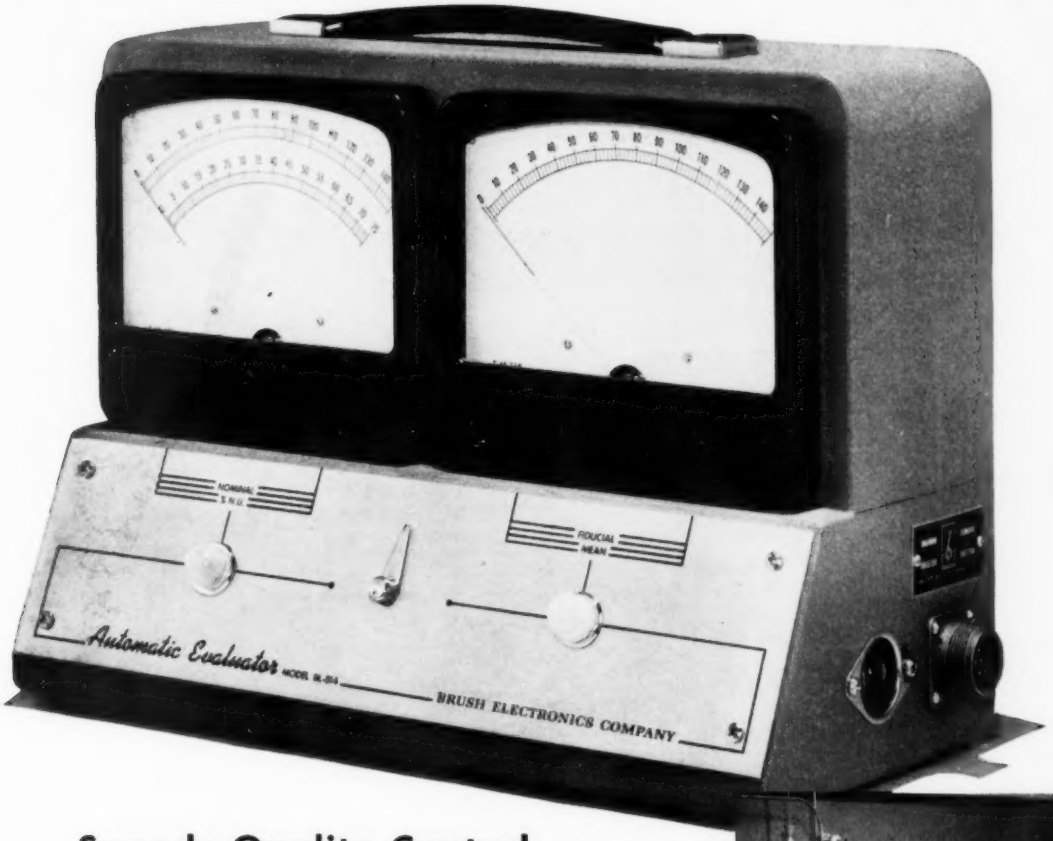
THIS ALUMINUM BEAM was designed especially for nylon and synthetic yarns. It is adaptable to all makes of warpers.

An aluminum beam designed specially for nylon and synthetic fibers has been brought out by Hayes Industries, Inc., Jackson, Mich. The beam is available in 30- and 32-in. heads. It has an extra-heavy center hub with 24 reinforced ribs and a barrel of ½-in. high-strength aluminum; it has withstood a load test of 263,000 lbs. (After continued loading, the head casting cracked, but the beam still held a load of 83,000 lbs., which allows removal of the yarn without loss; there was no failure of the threads holding the head to the barrel.)

The beam is adaptable for use with all makes of warpers; all surfaces are rustproof and snag-free; and the unit is designed to maintain and hold a permanent running balance.

Circle T-8 on Reader Service Card

New Automatic Evaluator



Speeds Quality Control with Brush Uniformity Analyzer*

The new Automatic Evaluator, designed for use with the Brush Uniformity Analyzer for textiles, offers you these major advantages in measurement of non-uniformity of yarn:

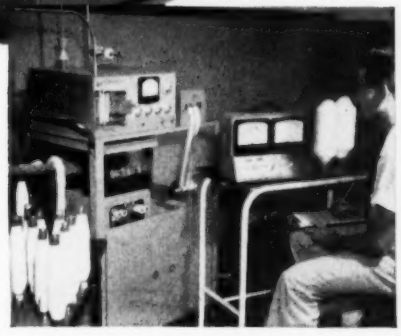
★ *You can obtain complete non-uniformity data on a 1000-foot sample of yarn in less than 4 minutes.*

★ *The Automatic Evaluator data correlates directly with the chart. All data is based on peak-to-peak variations, thus important variations are not "averaged-out."*

★ *A built-in timing device permits you to obtain data more easily than ever before. Automatic signal lights indicate when readings should be taken, and the operator does not have to push buttons, turn switches, or use correction devices.*

A staff of textile-trained engineers is available to help you with the application of the Uniformity Analyzer and Automatic Evaluator, both developed by the Institute of Textile Technology. For further information or demonstration send coupon now.

*Trade Mark



WRITE FOR LITERATURE OR DEMONSTRATION

Brush Electronics Company, Dept. 66-10
3405 Perkins Avenue, Cleveland 14, Ohio

☐ Please send me literature on the Brush Uniformity Analyzer and Automatic Evaluator.
☐ Please have your representative arrange for a demonstration.

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INDUSTRIAL AND RESEARCH INSTRUMENTS
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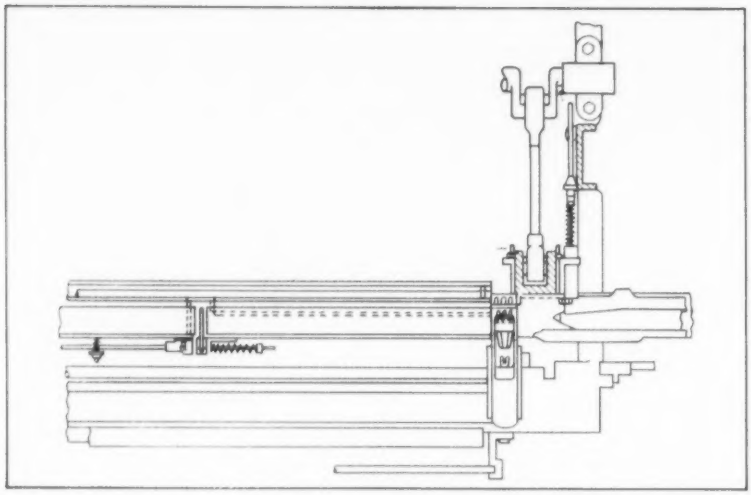
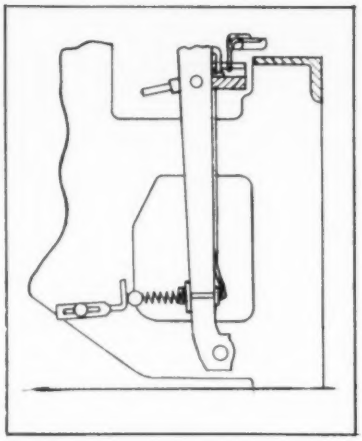
Blower Attachment Keeps Filling-Fork Well Clean



PLAN VIEW of a loom shows that the jet blower can operate on center-fork or side-fork stop motion. A copper tube (dotted line) leads from the jet cylinder to the filling-fork well.



THE JET BLOWER is mounted near the bottom of the lay sword, and the piston operates against a bracket that is attached to the loom frame.

A jet blower that keeps the filling-fork well on a loom free of lint, by sending a blast of air through the well on every pick, has been developed by Brame Textile Machinery Co., Box 943, Greensboro, N. C. The cylinder of the blower is mounted near the bottom of the lay sword, and the piston operates against a bracket that is attached to the loom frame.

On the forward motion of the lay, air is sucked into the cylinder through a spring-actuated intake valve. On the backward motion of the lay, the piston rod is pushed against the bracket (about 35 lbs. of air pressure is developed) and sends a blast of air through a copper tube leading to the filling fork well. This tube is bent around the filling fork, and the air escapes through small holes drilled parallel to the filling fork. These holes remain unclogged because the tube is closed off when the intake valve opens for air.

The jet blower can be used with a side-fork or a center-fork stop motion. The advantages of the jet are said to be:

1. The stop motion does not fail because of a choked filling-fork well.
2. The loom need not be stopped to clean the well.
3. Wild ends of filling are blown to the floor and jerked-in filling is reduced.
4. Maintenance on the blower is small; the principal parts replacements are springs and washers, and an annual inspection is adequate.

Circle T-9 on Reader Service Card

Two-for-One Twisting Spindle Doubles Tire-Cord Production

A two-for-one spindle for twisting tire cord on a 6-lb. package, brother to the smaller double-twist spindle described in this department in August, page 144, has been developed by Landolt & Co., Zurich, Switzerland. Both spindles are handled in the U. S. by Gubelin International Corp., 53 W. 53rd St., New York 19, N. Y.

Since two turns are put in for every revolution of the spindle, production is doubled on conventional twisters. Also, the double-twist spindles consume less power because only a part of the spindle is working at high speed; the rest of the spindle, including the bobbin, remains stationary. Power consumption is smaller because an unbalanced bobbin has no influence on the mechanics of the spindle.

Low tensions are practical on the spindle because the double balloon is controlled by the yarn-guiding pot that fits around the spindle.

THIS DOUBLE-TWIST SPINDLE is made especially for twisting tire cord. Features are high production, low tension, and low power consumption.

Circle T-10 on Reader Service Card

Rayon Reports

Published Monthly by American Viscose Corporation, New York, N.Y. October, 1953

Big Consumer Promotion Drive for Avcoset*

THE NEW FINISH THAT MAKES RAYONS PERMANENTLY WASHABLE
LIFE
TIME
THE NEW YORKER
GOOD HOUSEKEEPING
NEW YORK TIMES MAGAZINE
FOR THE FIRST TIME! AMERICA'S LEADING MANUFACTURERS MAKE PERMANENTLY WASHABLE RAYON APPAREL FOR YOU AND YOUR FAMILY!
CISCO CASUAL SHIRTS
AVCOSET
meant Permanent Rayon Washability
AMERICAN VISCOSE CORPORATION

American Viscose Corporation has launched an extensive advertising campaign, coupled with a complete merchandising program, telling the advantages of Avcoset fabrics to the national consuming public.

A two-page spread in the September 14 issue of Life opened the campaign. In all, eighteen advertising pages will appear in Life, Good Housekeeping, Time, The New Yorker, and The New York Times Magazine.

The advertisements feature Avcoset garments of eighteen manufacturers, including men's sports shirts, slacks, pajamas and robes, boys' wear, women's dresses, blouses, and sleepwear, and little girls' dresses.

American Viscose is backing up this advertising with a complete merchandising program. It is supplying manufacturers with hang tags to cover initial quantities of merchandise offered. In addition it is distributing selling kits that include display cards, window display suggestions, sales training booklets and statement enclosures. Mats are available for newspaper advertisements by local stores carrying the merchandise. A complete publicity program, including a special kit for women's clubs is planned.

The entire campaign is emphasizing that the Avcoset label assures the consumer that fabrics and garments carrying it are permanently washable for the life of the fabric.

Avisco is licensing the use of Avcoset free, but the licensee must apply the process properly and only to fabrics meeting every requirement of the American Standards Association's standards of washability.

*T.M. for cellulose ether produced by American Viscose Corporation.

MAKE USE OF Avisco® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers
RAYON ACETATE VINYON* FILATEX®

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Philadelphia, Pa.; Providence, R. I.

*TMC & CCC

New Finishing Machines Include Shearers and a Crabber

Four new finishing machines have been introduced by Sellers & Co. Ltd., Huddersfield, England:

1. Four-Cylinder Shearer

The Ray four-cylinder shearing machine is designed for cottons and rayons up to 12 oz. per sq. yd. woven on automatic looms. On these fabrics, a high grade of yarn is normally used and filling tails and floats are the bulk of the waste. Its running speed is 80 yds. per min., and it has a newly designed bed and seam let-through motion.

The operation of the seam let-through mechanism is electromagnetic, but it will continue mechanically so the cycle of timing will not be disturbed by an electrical shutdown. Reverse starting and stopping of the cylinders in sequence is controlled; the slight reverse motion of the cylinder lays the seam flat against the cloth surface. Two starting-stopping cycles can be run on the machine at the same time because of duplication of the let-through motion. After the cuts of each cylinder have been set, no adjustment is required after each threading-up; all the beds are jointly controlled by a lever at the front of the machine.

2. Sewing-and-Rolling Machine

This machine is designed to operate in conjunction with the Ray shearing machine. This machine is equipped with two cloth rollers; the shearing machine can draw off from one roller while the other is being loaded from a cradle. When used with the Ray shearing machine, the process becomes practically continuous; the only stoppage is for the removal of the shorn cloth and for the automatic sewing of end to end.

3. Three-Cylinder Shearer

The Mark-50 three-cylinder shearing machine has a capacity of 1,000 pieces of woolen cloth or 1,200 pieces of worsted fabric per week, and it is said that savings in wages and power will pay for the machine in three years.

Most fabrics can be sheared with one passage at 42¼ yds. per min.; top speed is 48½ yds. per min. The machine has been found suitable for pile fabrics and carpets at 3½ to 4½ times the normal production rate.

An automatic seam let-through motion controlled by a photo-electric cell can be provided. Since shearing is possible within 1¼ ins. on each side of the seam, a butt-sewing machine can be fitted in the automatic system.

4. Double-Roller Crabber

The fourth Sellers machine is a double-roller crabbing machine. On this machine, the wrapper tension is controlled by an epicyclic gear box, which drives both rollers at a constant speed regardless of cloth thickness. The two self-draining rollers can be run at different winding tensions, which permits the machine to be used as two separate units.

The wrapper can be wound on at zero tension, and the machine can be used for cloth-width shrinkage.

With automatic timing units, the steaming and cooling-time cycle can be preset and locked to reduce human errors.

Circle T-11 on Reader Service Card

Preformed Bumper Straps Are Easy To Install in C&K's

THIS BUMPER STRAP slips off the dowel directly onto the C&K loom rod for easy installation.

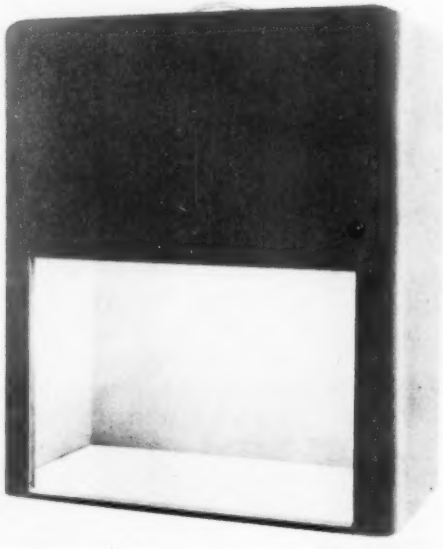
Spindle bumper straps for C&K looms are being preformed and mounted on a hardwood dowel by Graton & Knight Co., Worcester, Mass. A strap can be installed on a C&K loom in a matter of seconds, it is said.

All you have to do to make the installation is release the end of the spindle rod as usual and slide the strap off the dowel onto the rod. No pulling, hauling, or hammering is necessary; so the strap is protected against premature fiber breakage from excessive pounding during installation.

The strap is the patented Spin-Tex spindle bumper strap known as the Orange Line strap, and there will be no increase in price.

Circle T-12 on Reader Service Card

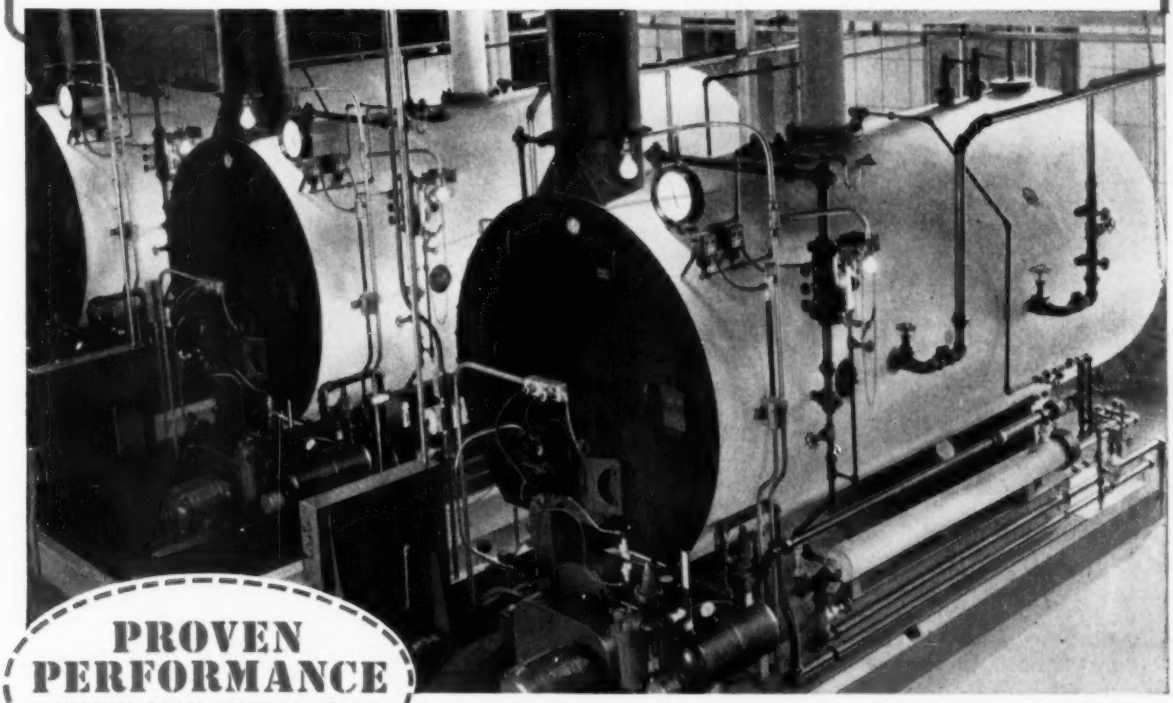
Portable Matching Light Simulates North-Sky Light



THIS PORTABLE COLOR-MATCHING LIGHT for matching swatches and dyes and inspecting samples has been announced by Macbeth Daylighting Corp., Newburgh, N. Y. The portable model gives the same simulated north-sky daylight as the larger Macbeth Skylights. Artificial light (incandescent) is available for comparison purposes. The location of this light is limited only by the proximity of an a.c. power outlet. Dimensions: 21 x 22 x 11½ ins.

Circle T-13 on Reader Service Card

Cleaver-Brooks boilers save $25,000 per year for Hoosac Mills...pay for themselves in 2 years' time!



PROVEN PERFORMANCE

ANOTHER OUTSTANDING REPORT FROM A CLEAVER-BROOKS OWNER

After installation and starting service was completed, a check was made on boiler output. Tests indicated efficiency exceeded the guaranteed 80%. After eight months' operation without tube cleaning, stack temperature showed no noticeable gain, indicating high efficiency had been maintained. *Planned and installed by Frank I. Rounds Co., Newton Highland, Mass.*

INSTALLING 3 Cleaver-Brooks self-contained boilers at Hoosac Textile Mills, New Bedford Division, was a major step in ending boiler worries. Hoosac can count on yearly savings of $25,000, and they're set up for future expansion as well.

Before deciding what type of boilers to install for replacing old, hand-fired boilers, Hoosac carefully considered these factors:

1. **Efficiency of steam generation** — the cost for supplying 12,000 lbs. of steam required each hour at peak capacity for heating and processing.
2. **Saving labor costs** — through safe, automatic operation.
3. **Cleanliness** — important to textile manufacture.

A study of past performance and prominence of similar units in the industry — showed that Cleaver-Brooks self-contained boilers would fill the bill.

Guaranteed 80% thermal efficiency was one of many influencing factors in selecting the 3 Cleaver-Brooks 150 hp. boilers. Even with loads as low as 30% of rating, these boilers operate with a flat 80% efficiency. (Hoosac operates their plant over widely fluctuating loads, particularly in summer.)

That they attained their objectives is borne out by these results — *results which showed the boilers paid for themselves in 2 years' time.*

1. **$15,000 savings in fuel** — fuel cost studies showed 275,000 gals. of oil at 5½¢ per gal. provide steam for a year's operation. Same steam formerly required 2,000 long tons of coal at $15.00 per ton.
2. **$10,000 savings in labor costs** — fully automatic operation minimized boiler maintenance. Personnel were then available for productive plant work.
3. **Cleanliness** — modern boiler room proved more efficient than previous cluttered arrangement. Hand firing, removal and disposal of fly-ash was eliminated.

At present, boiler operation is rotated so all three periodically receive the same service and maintenance.

Cleaver-Brooks steam or hot water boilers are showing similar savings for many other businesses. Standard boilers for heating or processing are available in a complete range of sizes from 15 to 500 hp, 15 to 250 psi — oil, gas or combination oil/gas fired. Investigate now — write for Catalog AD-100 and complete information.

CLEAVER-BROOKS COMPANY
Dept. L, 361 E. Keefe Ave.,
Milwaukee 12, Wis., U.S.A.

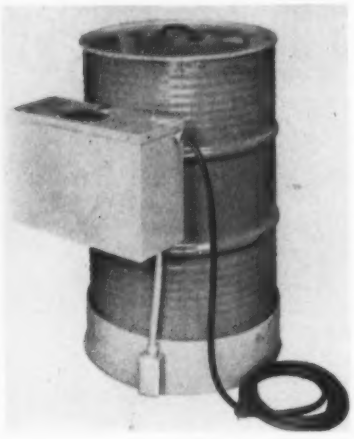
Cleaver-Brooks

ORIGINATORS OF THE SELF-CONTAINED BOILER

Steam Boilers • Oil and Bitumin Tank Car Heaters • Distillation Equipment
Oil and Gas Fired Conversion Burners

For more information, write direct or use Reader Service post card.

Degreaser Cleans Parts With Nonflammable Vapor



A new method of degreasing parts and materials has been introduced by Baron Industries, Los Angeles, Calif.

The Baronet degreaser is attached to a 50-gal. barrel, and parts are cleaned in pure, nonflammable trichlorethylene vapors.

The standard barrel-type unit has a working area 23 ins. in diameter, a vapor depth of 18 ins., a 2-kw. electric heating unit, a condensing chamber, a thermostat, a 15-ft. plug-in cord, and a cover.

←

ATTACHED TO A 50-GAL. BARREL, this degreaser generates vapors that clean greasy parts in less than a minute.

Circle T-14 on Reader Service Card

Oily or greasy parts are lowered into the vapor zone of this barrel-type degreaser and are cleaned in less than a minute. The portable Baronet requires smaller operating space and can be easily moved from job to job. Special air-cooled condensers eliminate water connections; so the degreasing units can be used wherever electric power is available.

The degreaser requires 5 gals. of cleaning solvent for effective operation. Dirty solvent is automatically reclaimed by an air-cooled condenser. Clean vapors are generated by electric elements mounted in the base of the assembly. A thermostat controls the output of vapor.

Power Sweeper Covers 100,000 Sq. Ft. per Hr.

THIS POWER SWEEPER is said to be suitable for sweeping cotton-storage areas, opening rooms, warehouses, and sidewalks.

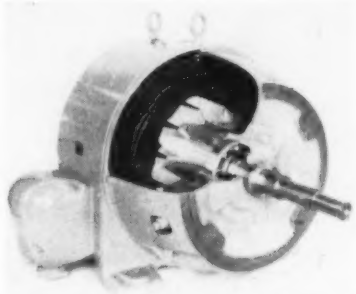
A new power sweeper developed by G. H. Tennant Co., 2586 N. Second St., Minneapolis 11, Minn., is said to be suited for sweeping cotton-storage areas, opening rooms, warehouses, and sidewalks. It sweeps a 36-in. path (a side brush increases the path to 48 ins.) and picks up lint, yarns, dust and dirt at speeds up to 6 mph.; space coverage is said to be 100,000 sq. ft. per hr. One man can reportedly tilt and dump a fully loaded dirt hopper (700 lbs.) in 30 secs.

The high-speed 36-in. brush rotates inside a vacuum compartment and hurls heavy dirt and litter into the hopper. At the same time, a fan sucks lighter dirt and dust into a large fabric bag. To keep dust from escaping, the brush compartment is sealed to the floor with a flexible rubber skirt.

Turning radius is 5 ft. Power comes from a 7.3-hp., air-cooled gas engine and the clutch is controlled by a forward-reverse foot pedal.

Circle T-15 on Reader Service Card

Close-Coupled Pump Motors Made to 60 Hp.



THIS PUMP MOTOR has a closed flange to keep liquid from the motor.

Close-coupled motors for driving centrifugal pumps are available up to 60 hp. in a new motor, Type SCB, put out by U. S. Electrical Motors, Inc., Box 2058, Los Angeles 54, Calif. This motor supports the pump on a NEMA Style C mounting bracket, which is said to eliminate shaft-alignment and pump-mounting problems. The step shaft for mounting the impeller has ground diameters for precise assembly and sealage against leakage.

A solid, closed flange on the adapter bracket keeps the pumped liquid from the motor. Also, a corrosion-resistant bronze slinger on the take-off shaft deflects any packing leakage.

Grease-lubricated ball bearings permit vertical, horizontal, or intermediate-angle installation.

Other features are asbestos-protected windings and Lubriflush lubrication of bearings.

Circle T-16 on Reader Service Card

Put A Gaylord Man On Your Team... It Pays Off In Reduced Packing Costs

One manufacturer is saving 75% in packing costs and 55% in container weight with his new Gaylord-designed "package".*

Your savings may not be as great . . . but a Gaylord man, working with management, design, production and purchasing, is almost certain to come up with cost-cutting suggestions for tough packing problems.

Look in the classified pages of your phone book under "Boxes (Gaylord)" for the Sales Office nearest you.

Name and address on request.

Gaylord Boxes

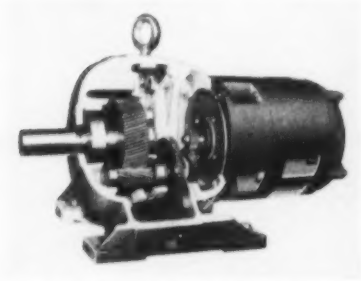
Their seen and unseen quality gives you an extra margin of safety.

GAYLORD CONTAINER CORPORATION

General Offices: ST. LOUIS • Sales Offices Coast-to-Coast

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT BAGS AND SACKS • KRAFT PAPER AND SPECIALTIES

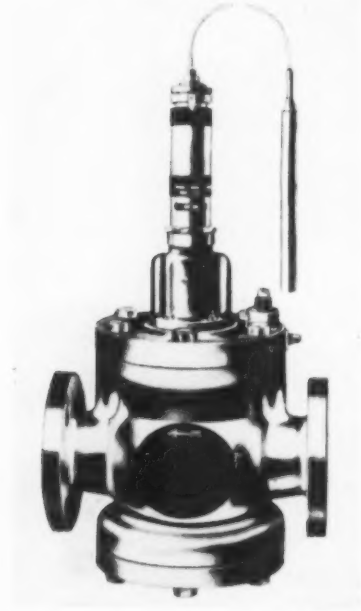
Gearmotors, 1 to 15 Hp.



A NEW GEARMOTOR series from 1 to 15 hp. has been announced by Century Electric Co., St. Louis, Mo. The motors are offered in a wide range of speeds, single, double, or triple gear reductions, and constant or variable speeds.

Circle T-17 on Reader Service Card

Temperature Regulators Control a 50° F. Range



THIS DIRECT-ACTING REGULATOR is for heating applications. For cooling applications, a reverse-acting regulator is used.

Self-operating temperature regulators that operate on the principle of liquid expansion are available from Farris Stacon Corp., 544 Commercial Ave., Palisades Park, N. J. The regulators are direct acting for heating applications (Type V1000) and reverse acting for cooling applications (Type VR1000).

A seated pilot valve positions the main-valve piston, which controls the throttling position of the main-valve disk.

Self-cleaning steam strainers protect the vital parts of the regulators and make unnecessary a separate strainer in the piping system.

The thermal system, which is an 8-ft. capillary and bulb, can be replaced without removing the regulator from the line.

Temperature range: any 50° range from 25 to 275° F.

Size range: 2 to 4 ins.

Maximum pressure: 125 psi.-ga.

Construction: cast iron.

Circle T-18 on Reader Service Card

TEXTILE *Equipment* NEWS

(*Continued on page 258*)

NEW *Dyes* AND *Chemicals*

New Water Repellent Requires No After Wash

A new silicone-based water repellent for almost all fibers, constructions, and finishes is now available from Onyx Oil and Chemical Co., Jersey City, N. J. Called Repelotex ST, the product is said to offer water repellency practically for the life of the fabric, at a cost equal to or lower than other treatments.

Proved in mill use after extensive plant trials, the product is said to defy dry cleaning and laundry soaps, to improve the strength properties of resin-treated fabrics, impart greater sewability and a better hand, and to be resistant to mark-off effects, spotting or staining. Easy formulation and application, ready compatibility with resin finishes, no after wash required, and lack of unpleasant odor either during finishing or after curing are claimed as advantages by the makers.

Circle D-1 on Reader Service Card

Three New Cibalans Show Outstanding Fastness

Three new additions to the Cibalan dyestuff range, made by Ciba Co., Inc., New York, N. Y., are said to have outstanding fastness to light and excellent fastness to washing, milling, perspiration, decatizing, carbonizing, peroxide bleaching, alkali, and chlorine. Called Cibalan Bordeaux RL, Blue BRL, and Red 2GL, the new colors are recommended for the dyeing of wool, silk, and some synthetic fibers.

Circle D-2 on Reader Service Card

New Copolymer for Coatings Has Built-in Plasticizer

A new "internally plasticized" vinyl-acetate copolymer, said to eliminate problems inherent in the compounding of polyvinyl acetate with chemical plasticizers, is being made by the Organic Chemicals Div., Dewey & Almy Chemical Co., New York, N. Y.

Called Darex Everflex, the new copolymer replaces polyvinyl acetate in regular formulations for adhesives and coatings since its permanent plasticity eliminates the need for additional plasticizers. Further, the internally plasticized copolymer does not lose flexibility through ageing, migration, or the volatility of conventional plasticizers, the makers claim.

Circle D-3 on Reader Service Card

New Processing Oils Aid Synthetics Operations

Two new products, Regent Coning Oil and Spinol RL, specifically developed for application to the new synthetic fibers, have been announced by Laurel Soap Manufacturing Co., Inc., Philadelphia, Pa.

Regent Coning Oil is a self-emulsifying, anionic coning oil with built-in antistatic properties for treating Orlon, Dacron, nylon, Acrilan, and acetate. The product is said to improve running and knitting properties and can be applied to filament or spun yarns either as received or as an emulsion from conventional troughs on winders. The product contains no mineral oil and washes out easily in a regular scour.

Spinol RL is a blended anionic, non-mineral oil compound especially prepared for spinning and knitting Dacron, Orlon, nylon, and acetate fibers and blends. It is designed to give lubrication as well as antistatic control. It can be used as a stock lubricant for use prior to spinning and as a yarn lubricant prior to knitting. The product can be used as received or in a water solution.

Circle D-4 on Reader Service Card

"Want to know why I always go to SOLVAY *FIRST* for these Textile Chemicals?...

. . . In a word—the answer is *service!* I mean sales service, delivery service, technical service.

Take delivery as an example. When I order textile processing chemicals from Solvay, I know I can depend on Solvay's efficient delivery service—from three convenient plants and over 200 stock points.

Occasionally, I run into a technical problem. Now here's where Solvay really shines, with an *exclusive textile* Technical Service that gives me the services of textile specialists—men who are experts in the textile business.

Yes, I have good reason for going to *Solvay first* for these textile processing chemicals."

SOLVAY PROCESS DIVISION
Allied Chemical & Dye Corporation
61 Broadway, New York 6, N. Y.

BRANCH SALES OFFICES

Boston • Charlotte • Chicago • Cincinnati • Cleveland
Detroit • Houston • New Orleans • New York • Philadelphia
Pittsburgh • St. Louis • Syracuse

SODA ASH

CAUSTIC SODA

LIQUID CHLORINE

SODIUM NITRITE

POTASSIUM CARBONATE

SOLVAY

Soda Ash • Caustic Soda • Potassium Carbonate • Calcium Chloride
Chlorine • Caustic Potash • Sodium Nitrite • Ammonium Bicarbonate
Cleaning Compounds • Sodium Bicarbonate • Snowflake® Crystals
Para-dichlorobenzene • Ortho-dichlorobenzene • Monochlorobenzene
Ammonium Chloride

LOOK TO SUPREME...

To be up-to-date on what's newest in knitting machine development, you should check with Supreme. Supreme has continually lead the field in producing profit-knitting machinery... highlighting super-speed production and multi-fabric versatility. This has given Supreme users more yardage per hour plus greater flexibility in production. By providing this extra "profit-knitability", Supreme helps knitters keep up with and ahead of competition.

Today, Supreme is continuing to push forward its' program of engineering, research and development toward even higher achievements in the knitting field. Remember to contact Supreme for the very latest in knitting equipment. *Write for complete information on any of the Supreme models mentioned on this page.*

...for your future "profit-knitability"

IC Fleeces Coatings

ML Pile, Loop-Terry and Plush

MJ Body Size Jersey, Wide Striped Jersey

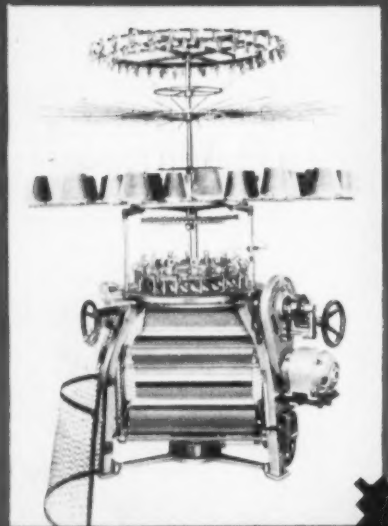
ROF Jacquard Type Floatless Patterns

SR Plain and Swiss Rib

LRP "Vent-Knit" Mesh Patterns

SA/AF Variable Stripes and Patterned Jersey

***MLT/SA** Long and Short Loop, Four Color Striped Terry



Supreme's MLT/SA* Gives The Knitter Varied Profit Possibilities

A recent example of Supreme's progress in multi-fabric machine engineering is the MLT/SA. This versatile model knits a striking new type of automatic variable striped or solid colored, long loop or regular loop terry fabrics. Loops can be adjusted for different lengths and densities. The MLT/SA uses both natural and synthetic yarns . . . produces beautifully textured fabrics ranging in weight from heavy bathrobe terry to light polo shirt terry at rates up to 16 pounds per hour. It can knit all of the variable striped jersey fabrics made on the Model SA and can easily be converted in your plant for the manufacture of striped, patterned and pattern placer jersey fabrics made on the Model SA/AF.

SUPREME
KNITTING MACHINE CO., INC.
94-02 104th STREET, OZONE PARK 16, N. Y.
Southern Representative and Showroom:
The Mallack Co., 711 S. Tryon St., Charlotte, N. C.

SK-171

LETTERS FROM OUR READERS

Address all communications to:
Editor, *Round Table*, TEXTILE WORLD
330 West 42nd Street, New York 36, N. Y.

AN EDITORIAL HITS HOME

Dear Editor:

I want to commend you on the editorial in the August issue of TEXTILE WORLD. Your editorials are usually very good, and this particular one is no exception.

I think that of the points you make, the first, concerning wholesale use of the ax, is by far the most important. The organization that engages in such practices certainly does itself and the industry no good in the long run. However, it discourages the graduating student more than it does the boy just entering college. In the latter case, he can still make a selection of another course, but the graduate feels his formal training is behind him.

Of course, one reason for the shortage of graduates in recent years has been the military obligations of most of the graduates. It would be interesting to know how large a percentage of the men with textile training who serve time with the armed forces come back to the textile industry after their military service.

Thanks again for the good editorials.

R. G. CARSON, JR.,
Assoc. Professor
Textile Management Dept.
Clemson College, Clemson, S. C.

Dear Editor:

Another excellent issue. I like the editorial. All too true. Not only do we need better opportunities for men especially trained in textiles but we need many more textile school and other college men in many, many departments. Too many noncollege department heads blindly follow traditional rule-of-thumb methods learned from their predecessors. They are subjective to their environment and to the past. Too frequently they have little, if any, training in dealing with labor other than the old "boss" technique.

A college graduate, however, is not tied to tradition. He picks up the essential basic technical and mechanical functions, not merely in terms of specific details but in terms of broad basic principles, and evaluates them in terms of integration with preceding and subsequent operations; is apt to be more alert to quality of finished product; more objective concerning constructive suggestions and criticism; and more aware that workers are people.

S. E. MIRGH

Lawrence, Mass.

HOW DOES AMERICA PRODUCE SO MUCH?

Dear Editor:

In the March issue of TEXTILE WORLD, in the table "World Position of Textiles in 1952," you give the following figures:

	United States	Great Britain
Cotton yarn		
Spindles (mil.)	23.0	34.0
Production (mil.lbs.)	4,479.0	663.0

It seems to me that you have omitted one zero for Great Britain, and I have staked 1000 cruzerios ($25) on it. If I lost, however, will you please tell me: How does America do it?

A. T. FUSIARSKI

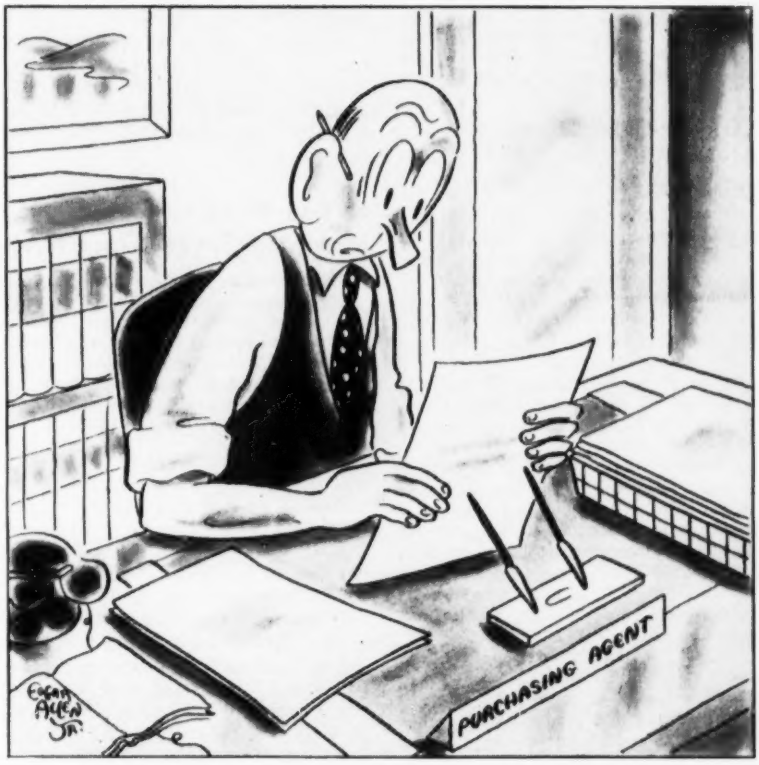
Rio de Janeiro
Brazil

Here's the answer to your question:

Your recent letter requesting corroboration of the figure for 1952 cotton-yarn production in Great Britain (34 million spindles spinning 663-million lbs. of yarn) has interested us a great deal, because to us it shows that in spite of all that has been written on the subject of increased productivity by means of modern equipment and cost-control methods, there are many people who do not yet understand what is happening in the American textile industry.

We are attaching hereto a clipping from a British production record, which appears weekly, showing that the weekly average for cotton yarn production in Britain in 1952 was 14.83 million lbs. This figure, multiplied by 48 working weeks in Britain,

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*



"Hmm-mm—Let's see—I have to get ten new looms, six spinning frames, two truckloads of potassium carbonate, and a pound of hamburger for the wife!"

comes to 710-million lbs. for the year. Our figure, taken from records made available to us from London, is 663-million lbs. —not too far off to cause your friend to lose his 1000 cruzeiros.

You wonder how the United States does it. Much of the machinery in use in the textile industry in the United States now was made during the last 15 years. This machinery produces in great quantities at high speed. In addition, with labor costs so high in the United States, textile engineers have carefully worked out workloads for employees tending these machines. Thus we see spinners tending 16, 20, and even 30 sides, depending on the yarn number, and weavers tending up to 80 looms.

In other countries, including Britain, these and other factors that affect over-all productivity—the distribution of labor, the quality of the cotton used, the condition of the machinery, the humidity in the room, the methods of control used, the organization of the processes, the speed of the equipment, the large packages, the stoppage frequency for machinery, the breaking frequency of yarn, and the quality of the preparatory and intermediary processes—are not given quite so much attention as in the United States. As a result, the productivity per machine and per man in the United States is very high.

The whole thesis of TEXTILE WORLD is that other mills and other countries can adapt some of the methods used by American mills if they will only try. One difficulty seems to be the lack of capital available to invest in new machinery and to have cost-control studies made and controls set up.

We'll be happy to indicate some books for you to read on this subject if you will write to us again.—EDITOR.

COTTON-CARD SPEEDS AND SLIVER QUALITY

Dear Editor:

Many of our younger boss carders and superintendents are much interested and a little excited, at the present time, about the high production possibilities of conventional cotton cards. Published reports of mills producing up to 25 lbs. per card per hour make them feel that they are really missing something.

Some of the older carders felt the same way about 10 years ago when Grover and Dunlap with their tests came out in favor of greatly increased card speeds. The recommended procedure at that time was to increase the cylinder speed from 165 rpm. to 225 rpm., with over-all speeds increased in the same proportion. Tests were said to show an increased production of 36% with no significant loss of yarn strength or appearance. Two specific increases given were from 10.8 to 14.7 lbs. per hr. and from 12.1 to 16.5 lbs. per hr.

One carder reported changing the counter pulley driving a line of 10 cards and thus increasing the cylinder speed to 191 rpm. and card production from 11.4 to 13.2 lbs. per hr., an increase of nearly 16%. He stated the increased product showed no increase in nep count or loss of

(*Continued on page 238*)

Questions AND Answers

Purl-Stitch and Links-and-Links Fabrics Are Identical

Technical Editor:

What is the difference between a purl-stitch fabric and a links-and-links fabric? (9691)

There is no difference between a purl-stitch fabric and a links-and-links fabric. Both are made on machines having double-ended needles. The machines may be circular or flat, and the fabric is used for outerwear garments (particularly children's garments), gloves, and circular hosiery.

The fabric is made by transferring groups of needles to the opposite cylinder or bed after one or several courses have been knitted. One or more courses are knitted, and the needles are transferred to the original position singly or in groups according to the pattern requirements.

Links-and-links is a German term meaning left-and-left, and apparently the term is derived from the hand-knitting custom of casting all stitches off to the left on every course to knit 1x1 purl fabrics.

If You Need Loom Gauges, Make the Simple Ones First

Technical Editor:

The European looms that we use are not built as precisely as American looms, and standard settings are hard to achieve. Moreover, the frequent changes in types of cloth discourage loom manufacturers from tackling this subject. How can we make our own loom gauges? (9690)

Start with simple gauges to get your loomfixers accustomed to using them, and then expand into more complicated ones.

For example, decide what the distance from the inside of the breast-beam to the reed line should be, and then make a gauge to that dimension from a piece of $\frac{1}{8}$-in. strap iron. Next, notch the same gauge to show where the picker stick should start to move the picker. This distance from the reed line to the breastbeam is constant on both picking motions.

If you are using bat-wing motions, use a gauge to set the distance of the picking shoe from the back picking-shaft collar.

Gauge settings were discussed in "Here's the Way to Stop Transfer Filling Breaks," [TW, Mar., '53, p. 108].

Battery or magazine gauges, if used correctly, give good results. Have the center of the bottom opening in the shuttle over the center of the opening in the lay end to expel the empty quill. Then move the magazine or battery so that the hammer or transfer arm that drives in the full bobbin of filling is positioned to put the bobbin in the center of the shuttle.

These gauges can be made by determining the correct distance between the reed line and the breast-beam when the crankshaft arm is pointing to the dead-front-center position. The binders are then set to position the shuttle in the center of the shuttle box. The magazine hammer should be over the center of the shuttle.

The shuttle is removed, and a steel block (18 to 20 ins. long) is made with a projection to fit in the bottom slot. A hole is bored in each end of the top of the block, and $\frac{1}{4}$-in. round rods are fitted (hand tight) in the holes. The other ends of the rods are bent around a stationary portion of the magazine.

Other magazines are moved forward or backward to fit the gauges.

This type of gauge can also be used to reset magazines. The magazines are torn down completely, reassembled, and then set. The loom is turned over by hand two or three picks to box the shuttle and then is started up. No other adjustments have to be made.

Tight Selvage Corrected In Weaving, Not Finishing

Technical Editor:

We are receiving viscose lining material with tight selvages in the gray. The material is 92x62, 150-den. twill. Can we correct the tight selvages in finishing? The material is pad dyed, put on jigs, and can dried; the finish is applied on quetsch rolls, frame Palmer dried with tension, calendered, and steam framed. (9687)

Nothing can be done in the dyeing and finishing of such goods. The trouble lies in weaving.

Weavers are probably pulling or unwrapping an end from the loom beam when a selvage end breaks behind the drop wires. The weavers should tie a

knot to the broken end and weave the knot into the cloth. However, it's often difficult to weave knots through the reeds on 150-den. yarn because the knots become untied.

One solution is to run the selvage end from a spool until the broken end becomes long enough to be replaced in the warp.

Regain Used To Correct Lap and Sliver Weights

Technical Editor:

What is the actual moisture content in cotton picker laps or drawing-frame sliver at different relative humidities? (9685)

The amount of moisture present in cotton is stated as percentage moisture regain and not as moisture content. Moisture content indicates the percentage of the sample or unit tested that is water. For example, a specimen weighing 100 grains contains 7% moisture content. 100x0.07 = 7 grs. moisture content. Dry weight = 100 − 7 = 93 grs.

Moisture regain is the amount of moisture a bone-dry specimen picks up when exposed to certain humidity conditions. For example, a bone-dry cotton specimen weighing 100 grs. is exposed for 6 hrs. in an atmosphere of 65% relative humidity at 70° F. A reweigh of the specimen shows a weight increase to 107 grs. Regain = $\frac{(107 - 100) \times 100}{100} = 7\%$

Relative humidity, unless the temperature is stated, does not express the absolute amount of moisture in the atmosphere or its probable effect in conditioning cotton specimens. Examples:

2.86 grs. of moisture per cu. ft. of air = 100% r.h. at 40° F.

2.86 grs. of moisture per cu. ft. of air = 35% r.h. at 70° F.

2.86 grs. of moisture per cu. ft. of air = 14% r.h. at 100° F.

Since the same amount of moisture in the air gives different relative humidities at different temperatures, weight correction of picker laps or drawing sliver should be made on a regain basis. Correction can be made as follows, when standard regain is 7%:

$$\frac{\text{Actual weight} \times (100 + \text{actual regain})}{(100 + 7)}$$

Example: (50-oz. lap)

$$\frac{50 \times (100 + 5)}{(100 + 7)} = 49.1 \text{ oz. corrected weight.}$$

(Continued on page 260)

Curtis W. McGraw

Everybody who knows TEXTILE WORLD has known the influence of Curtis McGraw, president and chairman of the board of the McGraw-Hill Publishing Co., who died September 10. The enduring mark of his leadership in the task of keeping business well informed, shaping the technical development of industry, and holding the nation to an awareness of its power for greatness and goodness must remain on these pages. But all of us have lost something in his death.

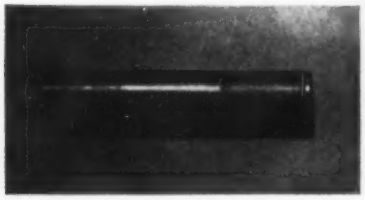
Mr. McGraw, 57, was the third son of the late James H. McGraw, Sr., founder of the publishing company, and of Mrs. Mildred Whittlesey McGraw of Madison, N. J., who survives him. His wife, the former Elizabeth Woodwell, of Princeton, N. J.; a daughter, Mrs. James L. Stoltzfus of Lake Forest, Ill.; and three brothers, Harold W. McGraw, James H. McGraw, Jr., and Donald C. McGraw, also survive. Donald C. McGraw, a vice president of McGraw-Hill Publishing Co. since 1945, has been elected to succeed his brother as president.

Born in Madison, N. J., October 13, 1895, Curtis McGraw was a graduate of the Lawrenceville School, Lawrenceville, N. J., and of Princeton University. At Princeton, he was president of his freshman class and captain of his varsity football team in 1919 and was active in basketball and other sports.

He joined the McGraw-Hill Book Co. (McGraw-Hill subsidiary) in 1920 and was vice president, treasurer, and director of the book company from 1927 to 1950. He became vice president and treasurer of the McGraw-Hill Publishing Co. in 1943; and in February, 1950, he was elected president and chairman of the board.

Kinks AND SHORT-CUTS

Knurl the Shaft Surface To Hold Camshaft Gears



KNURL THE SURFACE of the camshaft at the keyway, press the gear on the shaft with a hydraulic press, and the gear stays put.

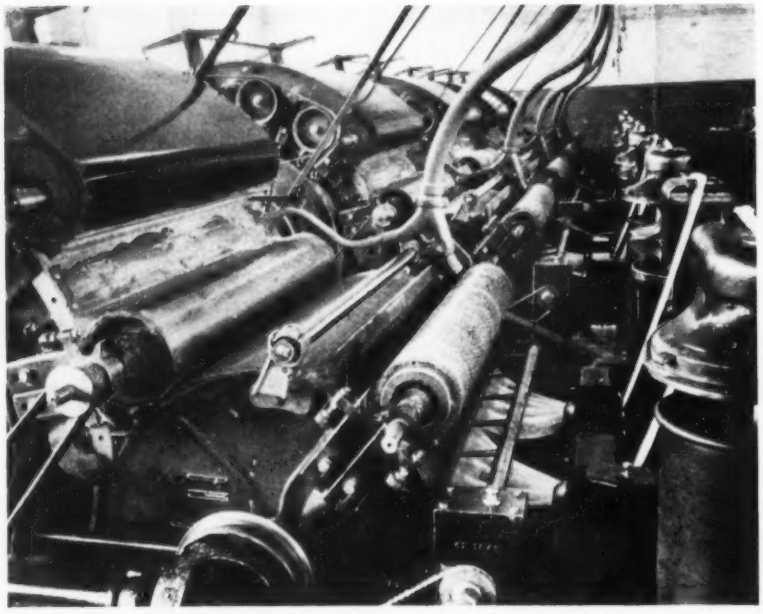
We used to have a lot of trouble with loom camshaft gears coming loose from the camshafts. We even welded the gears to the camshafts to try to keep them tight, but the welding often broke in as short a time as one week.

We have a new way to keep the gears tight on the camshafts. We knurl the camshaft surface for the full length of the keyway and then press the gear on the camshaft.

The camshaft is placed in a lay, and a knurling tool is used to knurl the surface.

Camshaft gears fastened this way just don't come off. *Carl F. Franzen, Joanna, S. C.*

Doffers on Roller-Top Cards Are Continuously Stripped



DOFFER STRIPPER runs at 16 rpm. and keeps the doffer clean. The cylinder now has to be stripped every 16 hrs. instead of every 8 hrs., and the web is more even.

Our roller-top cards were formerly stopped every 8 hrs. to be hand stripped. At least one hour of the production time was thereby lost every shift.

Now we have continuous stripping of the doffer by a stripper roll. The new roll is covered with regular stripper wire and runs at about 16 rpm., but this speed varies with cylinder speed.

The new roll keeps the doffer clean, and the cylinder has to be cleaned only half as frequently—every 16 hrs.

Lost time for stripping is less than half as much as before, and our webs are more even. *Fred Guthrie, Hickory, N. C.*

To Avoid Rust Marks in Cloth, We Nickel Plate Loom Parts

Twenty-five per cent of our bleached goods were being rejected by the buyer because the finished cloth had many small holes in it. The goods were bleached with the continuous-bleaching method using peroxide.

Other defects in addition to the small holes seemed to come from the same source of trouble. White goods yellowed, unlevel dyeing was caused, and shade changes, spotting, streaking, and sometimes crocking were encountered.

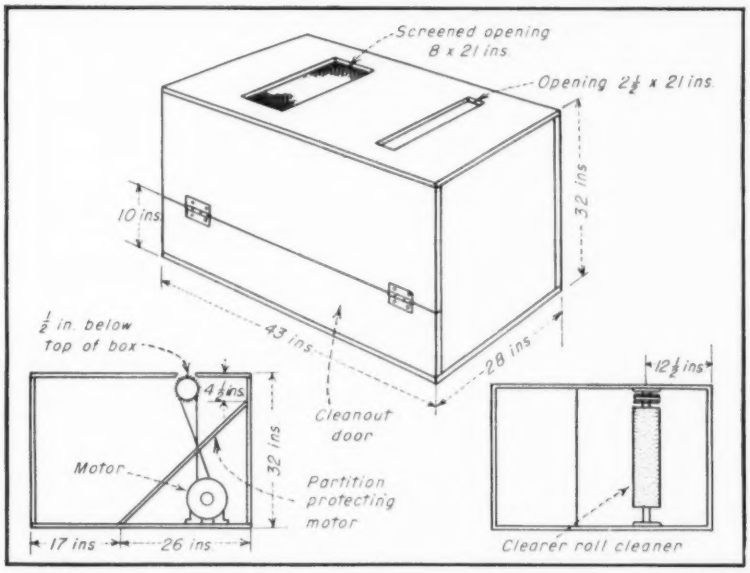
We finally found the trouble was coming from small pieces or flakes of rusty iron that came from our looms. The rust flakes were coming from the guide rolls on the loom breastbeams, reeds, heddles, and whiprolls.

To eliminate the trouble, we changed our reeds and heddles to the stainless-steel type.

We also changed many of our breastbeam guide rolls and whiprolls to stainless-steel rolls. Then the other guide rolls and whiprolls were nickel plated.

Now we do not have any rust spots caused from iron flakes, and our cloth is generally much cleaner. *M. C. Dutt, Indore, India.*

This Machine Cleans 240 Revolving Clearers an Hour



STRIPPER ROLL is set below slot in box, and the operator just holds clearers in the slot to clean them quickly and efficiently.

Hand cleaning of revolving top clearers is a thing of the past in our mill. An oiler, in his spare time, cleans 240 clearers an hour with this machine we built ourselves.

The machine consists of a motor-driven stripping roll encased in a wooden box.

The box is 43 ins. long, 28 ins. wide, and 32 ins. high. A 4-in. wood roll covered with ¾-in. straight burnishing wire is set 12½ ins. from one end and ½ in. below the top of the box. A slot 2½ ins. wide and 21 ins. long is cut in the box top just above the roll.

The roll has a 4-in. pulley at one end that is driven by a round leather belt from a 4-in. pulley on a ½-hp., 1,140-rpm. motor.

An 8x21-in. screened opening is cut at the other end of the box top to reduce air pressure in the box and allow waste to drop on the box floor.

A hinged clean-out door along one side of the box provides for easy removal of waste.

A partition separates the stripping roll from the motor so that the waste doesn't foul the motor. The partition, as shown in the sketch, starts 4¼ ins. from the top of the box and extends over the motor to a point 26 ins. across the box floor.

In operation, a revolving clearer is held in the slot cut in the box top. The operator presses lightly on the cut-out section of the clearer and removes it, in a few seconds, when it is clean.

The stripping roll should rotate away from the operator as he stands at the end of the box.

We find it handy to have a switch on the end of the box where the operator stands. *Lloyd Sickles, Whitnel, N. C.*

$500 for Best Kink in 1953

$25 for Best Kink in Each Month

In Addition to Space Payment on Acceptance

You undoubtedly know many Kinks and Short-Cuts that are helpful to mill operators. Write them down and send them in. We pay promptly on acceptance—before publication. In addition, your Kink may win the $500 check for the best Kink of the year or the $25 check for the best Kink of the month; maybe both!

Send in your Kink now. There is always a contest going on. The more good Kinks you send in, the better your chances of winning a prize in addition to earning some easy money for every Kink accepted.

We will polish up your writing and will have an artist make finished drawings. But send in plenty of details so that your Kink can be clearly explained. Be sure your sketch is clear and well labeled, but it need not be a polished job. Best of all, send us a good glossy photograph of it; we will pay you extra if you do and we can use it.

Look over the Kinks in this and other issues. You will get ideas you can use as well as inspiration for Kinks you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments or methods of merit—anything that will cut costs, improve quality, or help production.

Your published Kink will be judged impartially by other mill men. In cases of ties, duplicate prizes will be awarded.

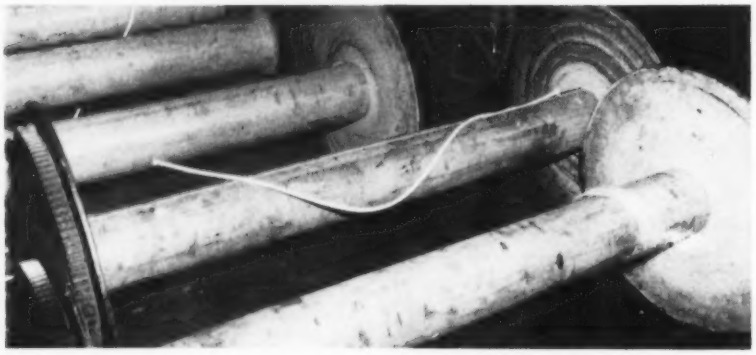
RULES OF CONTEST

1. No limit to number of entries.
2. New $25 prize contest every month, $500 prize contest for the year. Monthly contest confined to Kinks published that month, yearly to those published in calendar year 1953.
3. All Kinks paid for on acceptance; extra payment for photographs. Drawings need not be finished (clear detailed pencil sketches will do).
4. Previously published material not eligible for prizes.
5. Unless you advise to contrary, we assume we may sign your name to Kink when published
6. Prize winners will be selected by readers, a different group each time. At least 200 will be asked to select preferred Kinks in each issue. Their votes will select the best Kink, and their decision will be final.

Send Kinks to:
KINKS CONTEST, TEXTILE WORLD
201 E. Coffee St., Greenville, S. C.

Kinks and Short-Cuts

Rope on Loom Beam Saves Carpenter's Time



ROPE FITS SNUGLY without the warp yarns in place and is tapped in place with a beam weight by the slasher tender. Rope life is long, whereas stick life averaged one warp.

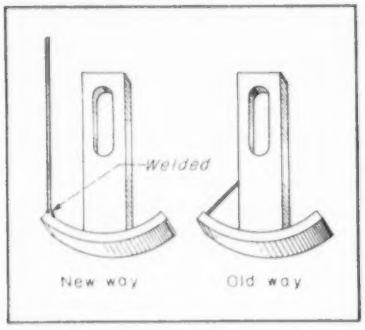
Our carpenter used to spend a day a week cutting sticks for our loom beams. Most sticks didn't last for more than one use; and even if they did, splinters cut the yarn.

We'd seen ropes work on cloth rolls, so we tried them on our loom beams. The rope is cut to reach within 2 or 3 ins. of each end, and we prefer tacking one end in the slot.

The slasher tender knocks the rope in place with a weight from the beam-tensioning system.

We're not troubled with yarn cut by splinters any more, and our carpenter is available for more important work. *C. A. Hendrix, Simpsonville, S. C.*

How We Stop Jerk-Backs On C&K Looms



FILLING CAN'T HANG on the improved guide because the rod forces the filling back toward the shuttle. Filling used to hang on the corner of the old guide.

We formerly had a lot of trouble with jerk-backs in the cloth on the drop-box end of our C&K looms. The filling hung on top of the shuttle guides and would weave into the cloth when the ends broke loose from the guides.

We stopped the jerk-backs by welding a 4½-in. steel rod of ⅛-in. dia. to the top outer edge of the shuttle guide.

Now, when filling balloons against the shuttle guide, the rod forces it back down and the filling is woven into the cloth without hanging.

There are no disadvantages to this new arrangement. The cost of making the change was small because our machine shop welded the rod to the guide.

Our cloth quality and weave-room production are both improved. *Bernard Dixon, Danville, Va.*

A Signal Light Saves Lathe Motors

The motors on the lathes in our machine shop are totally enclosed with guards so that it is hard to see when the motors are running. We can't hear them run either because mill machinery is running in a department over the machine shop.

Several months ago the motor on one of the lathes ran all during one shift and, as a result, the windings burned out.

We have placed red signal lights on all our lathes to show when the motors are running. The lights are connected to the motor switches; and when a motor switch is thrown, the red light automatically comes on.

Now we're saving power because we know when to turn off lathe motors, and there is no more danger of burning out motors. *Lloyd McCarver, Huntsville, Ala.*

Build This Lift Truck To Fill Winder Trays

We have halved the time it takes to fill a winder tray by using a special lift truck. And the job is lots easier for the yarn man, too.

The truck is essentially a wheeled lifting section of a quill stripper.

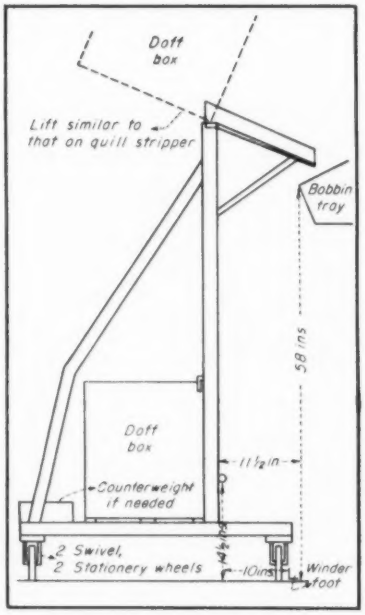
Width of the truck is determined by the winder alley, but height is about 63 ins. The frame is made from ½-in. angle iron.

The leading two wheels are swiveled to make it easier to guide the truck along the edge of the bobbin tray. The other two wheels are rigid.

The chute at the top fits flush with the bobbin tray, and the yarn man should be careful not to damage bobbins as he pushes the truck along the bobbin tray.

The lift can be motorized and the power supplied from a drop card, or it can be hand operated.

A counterweight should be put on the base of the truck to eliminate any possibility of the truck's tipping over when a full doff box is lifted. *Kenneth K. Kiser, Lenoir, N. C.*



DOFF-BOX LIFTER resembles the lifting section of a quill stripper and is wheeled along the winder to fill the bobbin tray. Lift can be electrically or hand powered.

TEXTILE BANKING COMPANY

Inc.

Factoring Service

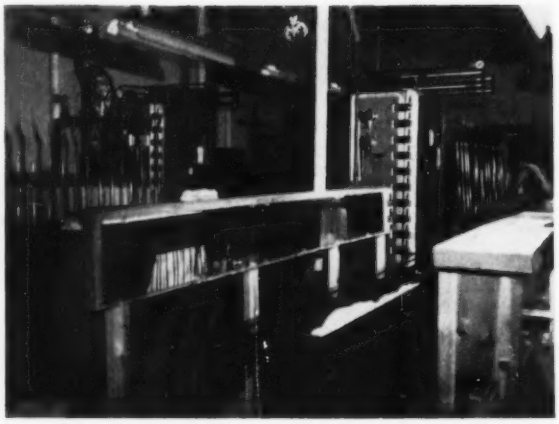
Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

55 MADISON AVENUE • NEW YORK

Kinks and Short-Cuts

Hosiery Quality Improved with Mirror Installation

MIRROR BEHIND FORMS helps operator to keep welts straight and neat on both sides of the form.



FOUR BRACKETS support these three 12-in.-high mirrors that stretch the length of the spider.

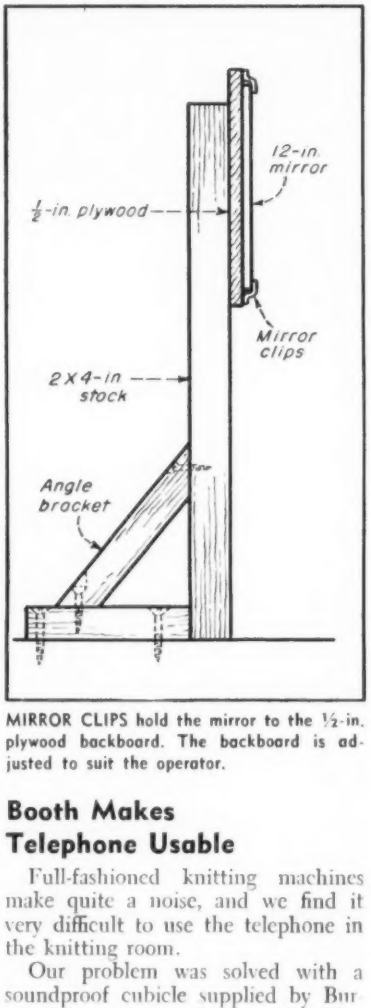
We pay close attention to preboarding to get top-quality hosiery. On our Turbo machines the operator can see only one side of the boards, and it was not easy to adjust the stockings on the forms to give us the quality job that we required.

We overcame the problem by installing mirrors the full length of the spider track on both sides of the steam box.

Our maintenance man made legs from 2x4-in. stock to hold the mirror frame. The legs are screwed to the floor and are supported by an angle bracket. A ½-in. plywood bracket is fixed to the top of the legs.

The mirrors are fixed to the backboard by regular mirror clips from the hardware store. The mirrors are 12 ins. deep and adjusted opposite the welts to a height to give the best operator efficiency. We chose a standard length of mirror to economize. The mirror seams do not interfere with the operator's work.

The job was inexpensive, our operators like the installation, and both quality and production have been improved. *Ira M. Schey, Lenoir, N. C.*



MIRROR CLIPS hold the mirror to the ½-in. plywood backboard. The backboard is adjusted to suit the operator.

Here's a Punch Press To Make Holes in Spring Stock

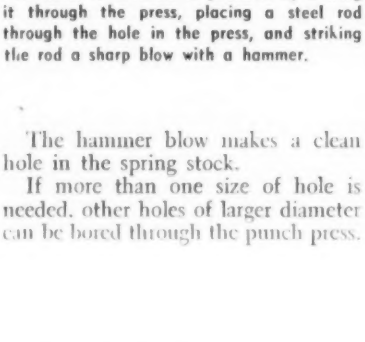
Spring stock used for brake bands often has to have holes punched in it. The stock can't be drilled easily because drill-bit damage is too high.

We made a punch press to punch holes in spring stock easily.

We bored two holes on 3-in. centers in each of two pieces of flat steel-plate stock ½-in. thick and tapped the holes in one plate for ¾-in. capscrews. The two plates were bolted together. Then we bored a ⅛-in. hole all the way through the two plates halfway between the two capscrews.

To punch a hole in a piece of spring stock, we mark the place where the hole is to be punched in the stock and bolt the stock lengthwise through the width of the two plates with the marked hole in line with the ⅛-in. hole.

We insert a ⅛-in. steel rod in the top hole of the plate and tap it sharply with a hammer.



THE SPRING STOCK is punched by bolting it through the press, placing a steel rod through the hole in the press, and striking the rod a sharp blow with a hammer.

The hammer blow makes a clean hole in the spring stock.

If more than one size of hole is needed, other holes of larger diameter can be bored through the punch press.

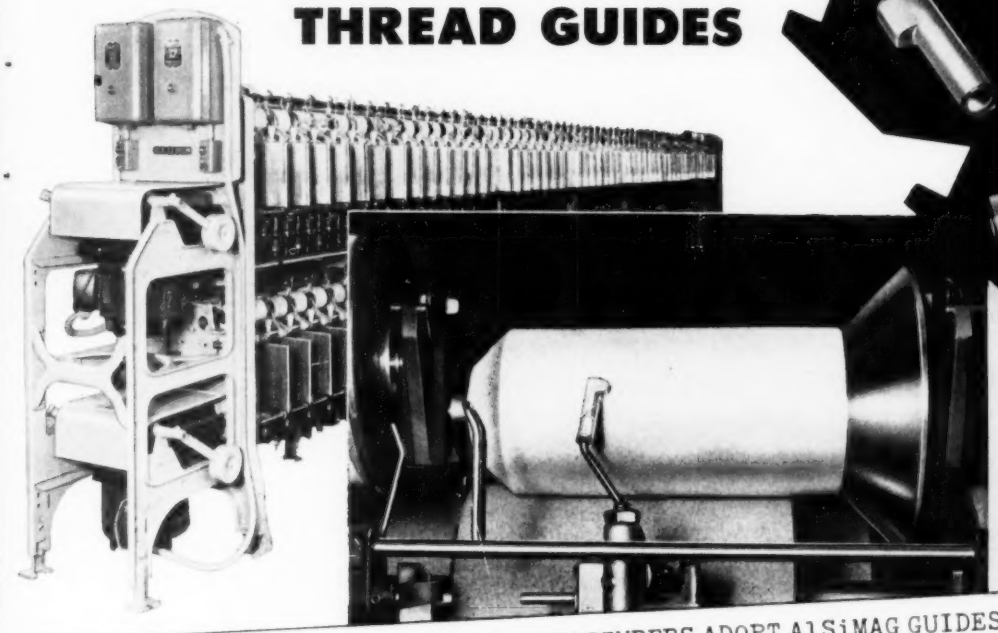
Booth Makes Telephone Usable

Full-fashioned knitting machines make quite a noise, and we find it very difficult to use the telephone in the knitting room.

Our problem was solved with a soundproof cubicle supplied by Burgess Manning Co., Libertyville, Ill.

FLETCHER *STANDARDIZES ON* ALSIMAG®

THREAD GUIDES



Three views of guide shown actual size

AlSiMag GE-28146 THREAD GUIDE with metallized ends. So hard, long-lived, it is soft soldered for PERMANENT MOUNTING.

MORE AND MORE LEADING MACHINERY MANUFACTURERS ADOPT AlSiMAG GUIDES AS STANDARD EQUIPMENT

FLETCHER WORKS

of Philadelphia, like other leading textile machinery manufacturers, standardizes on AlSiMag thread guides for their new Heavy Duty King Spool Pirn Twister and the Heavy Duty King Spool Twister for Conventional Spinning Bobbins. AlSiMag guides were chosen because of their extreme hardness and long life and because they " . . . lay the yarn on the spool most accurately and enable us to produce a perfectly formed king spool free of overwinds."

These guides have metallized areas on both ends. These metallized areas are fired into the ceramic and become an integral part of it. This permits Fletcher Works to attach the guide at both ends by soldering. The result is that the guides are accurately and permanently mounted. These AlSiMag guides are so hard, give such long service, that permanent attachment is desirable.

Guides with areas metallized for attachment by soldering are another AlSiMag FIRST. Introduced about two years ago and thoroughly tested in many mills, this feature is now available on all AlSiMag guides on special order.

The extremely long life of AlSiMag guides has been proved in mill after mill. In many instances the cost records of those mills show that AlSiMag thread guide costs, per pound of yarn processed, are LESS THAN 5% of former guide costs. AlSiMag guides can make big savings in YOUR MILL.

SEE FOR YOURSELF!

Test samples from our files sent without charge on request. If your production could be improved by a special guide, send us your ideas and let us make samples to your specifications at reasonable cost. Your own tests will show you that you can speed your processing, have less down time, improve your quality, and save money with AlSiMag guides. Test them—and you'll buy AlSiMag.

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Kinks and Short-Cuts

We Use False Reeds To Reduce Worsted Mending

On some fine worsted cloths, we were bothered with two or more warp ends drawn through the same dent in the reed rolling together between the harnesses and the reed so that the ends would not separate when the warp shed opened. As a result we had to mend the woven cloth.

Now we use a false reed to separate the warp ends. We space the wires so that one wire is between the ends of every two dents of the reed.

The false reed is made from fine spring-steel wires (17 gauge). The wires are 9½ ins. long and have an eye at one end. They are strung on a 6-gauge wire that is bent into a hook at each end, and the hooks are stapled to the back of the handrails of our looms. The wires are also stapled to the handrail of the loom at two other places.

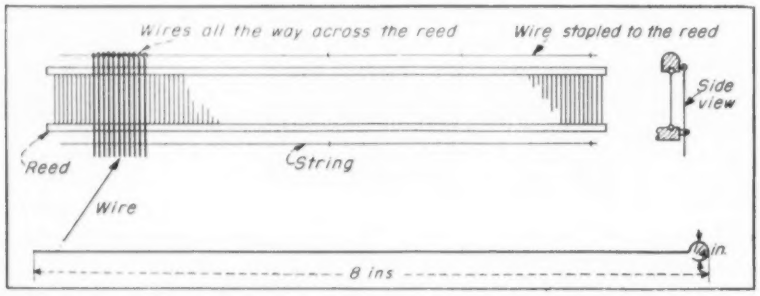
After the wires are stapled to the handrail, they are dropped between the warp ends by hand.

The bottoms of the wires are held in place with a heavy cord run through the eyes of the wires and strung across the false reed underneath the warp. A spring is fastened to one end of the cord and to the back of the lay to keep tension on the wires.

As the lay moves back and forth, the false-reed wires keep ends that formerly stuck together separated.

The false reed has eliminated most of our stitchings and, therefore, has reduced our mending costs. Loom production is higher too. *A. Keith Fawcett, Huntingdon, P. Q.*

False Reeds Make It Easy To Weave Fuzzy Yarns



THE FALSE REED fastens back of the handrail. The wires separate two or more ends drawn through the same dent in the reed to keep them from rolling together.

We used to have a lot of trouble weaving gabardines, poplins, etc. from loosely twisted cotton yarns. The trouble was the ends drawn through the same dent in the reed stuck together and made warp skips in the woven cloth.

Now we use false reeds to completely solve the problem. *H. J. Armstrong, Yorkshire, England*

[False reeds are certainly valuable in weaving cloths where warp ends drawn through the same dent in the reed have a tendency to stick together or roll together. But false reeds made to do the job right are available from regular heddle manufacturers.

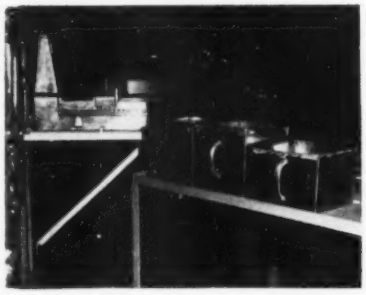
The manufactured false reeds must be cheaper, too, than make-shift ones.

Regular false reeds have substantial frames that can be securely fastened to the top of the handrail with regular handrail bolts. They don't have to be fastened at the bottom.

The false reeds are placed in the warps by drawing-in hands as warps are drawn in.

In emergencies, the false reed can be placed in the warp while the warp is on the loom.—Editor]

Use Metal Boxes To Check Fiber Weighings



METAL BOXES all weigh exactly the same and have convenient carrying handles to check Fiber-Meter weighings.

Our old method of checking the amount of stock weighed out in each weighing on our Fiber Meters was to catch the fibers on a paper and then transfer the fibers to a weighing box. That extra handling offered a chance to lose some fibers and took longer than we felt necessary.

Now we have a metal box for each machine. Each box weighs exactly the same, so we set our scale to read the contents directly—no subtracting. We have a scale for each line of Fiber Meters.

We don't use the paper any more. We catch the drop from each scale pan in a separate box.

This method is more accurate and saves us a lot of time; we check weighings three times every shift.

Use Old Crankshaft Stock To Repair Usable Crankshafts

The drive end of our loom crankshafts wears out before any other part. Since crankshafts are expensive, we repair the worn parts and reuse the crankshafts.

To repair the crankshafts, we cut off the worn end section of the shaft and weld another section to it. We formerly used cold-rolled steel the same diameter as the cut-off shaft to replace the cut-off section.

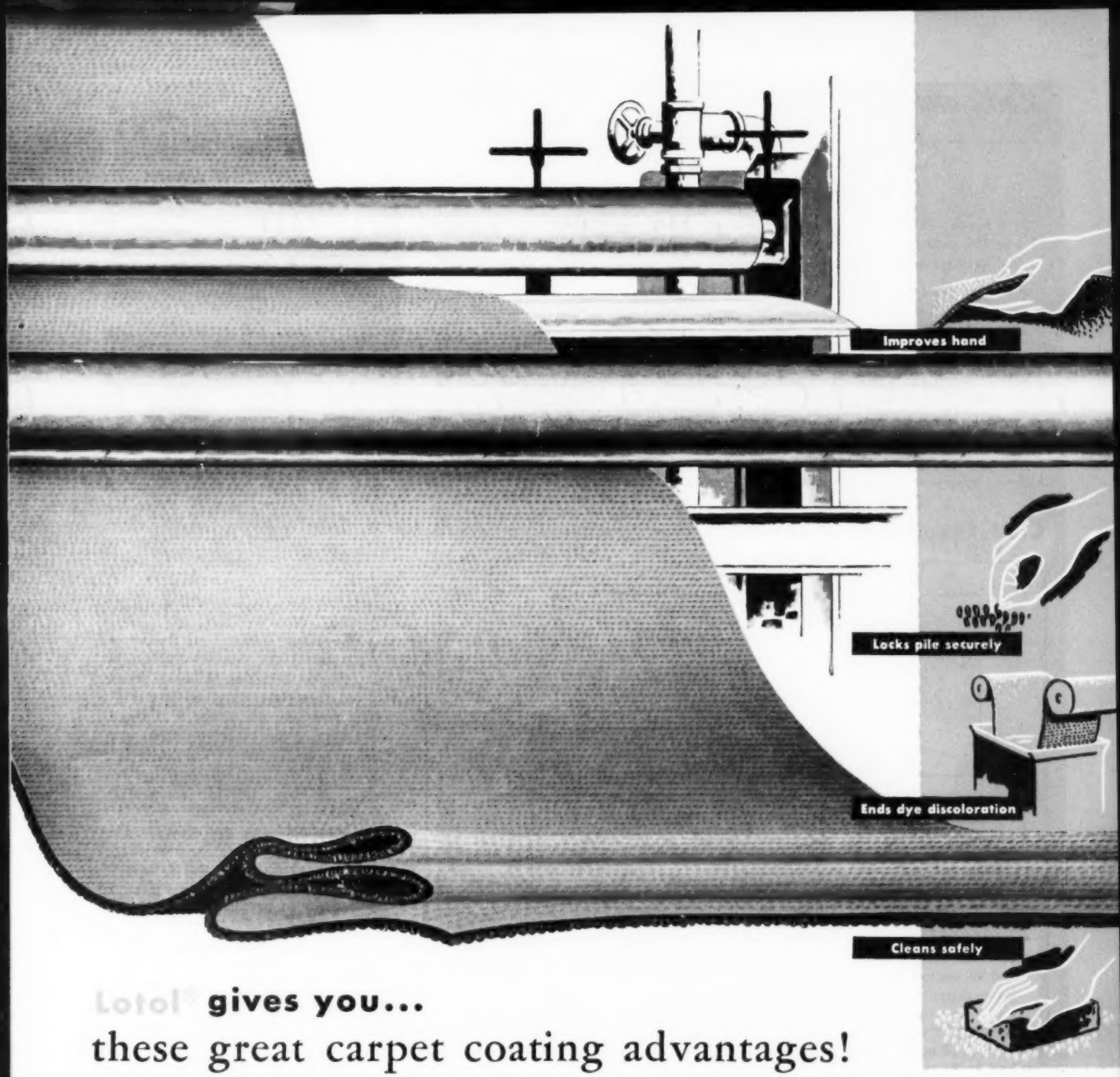
Now we use pieces of the center sections of discarded shafts to repair usable shafts.

The center section of crankshafts is tougher than cold-rolled steel, lasts longer and doesn't cost anything.

The center-section material is also larger than the crankshaft it is welded to, so the weld and the piece welded on can be turned down in a lathe to perfect alignment.

It is easy to repair crankshafts this way, and we have never had one break. *Carl F. Franzen, Joanna, S. C.*

THE JIG is made to rotate the crankshaft so that it can be welded in perfect alignment all around. The two sections of shaft are each tapered from the center point ¼ in. back along the shaft. When the points are put together, there is a total of ½ in. of space to fill by welding.



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Find out more about Lotol and how it can help you produce a finer carpet, more economically. Write to address below.

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Best-Kink Award for August

Each month TEXTILE WORLD awards $25 to the submitter of the Kink judged by a panel of over 200 practical mill men as the best for that particular month. A new batch of Kinks appears each month, and a new group of readers acts as judges each month.

If you are asked to judge one of these days, be sure to help select the best Kink by sending back your answer in time for final tabulation. Closing date for judging is the last day of the month in which the Kink appears.

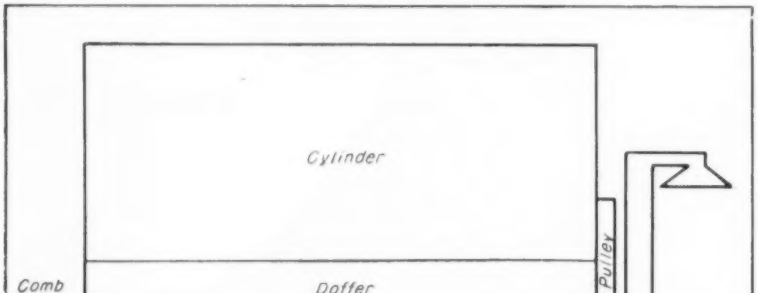
The best Kink for August, according to TEXTILE WORLD reader-judges, was:

"Brush on Overhead Cleaner Keeps the Track Clean"

By J. B. Boyter, Dallas, N. C.

Mr. Boyter is being sent a check for $25 with the compliments of TEXTILE WORLD.

Card Reworkable Waste for Better Results



METAL CHUTE replaces coiler head on waste card, and loose stock is drawn through a 4-in. pipe back to the picker.

Blending reworkable waste back in has always been a problem, but our system of carding the waste and blending the uncondensed web behind the pickers works fine.

The reworkable waste is run through a conventional waste machine and then taken to a picker to make laps. These laps are then run on a card fitted with a metal chute instead of a coiler head.

The uncondensed doffer web falls into the chute and is drawn into a 4-in. pipe that conveys the stock back to the gyrator section behind a picker. Putting the attachment on the card closest to the picker room minimizes the length of pipe needed.

The percentage of waste put back in the mix is controlled by the speed of the waste card.

The double carding removes all flakes and neps from roving waste and completely opens up the roving. Settings on the waste card are the same as on our regular cards.

Cost of the system depends on the distance the pipe has to be run from the waste card to the picker. The pipe gets its suction by being attached to the condenser in the picker room.

This system works fine on some combed work, and on coarser carded work the doffer and cylinder strips can also be blended back this way. *J. B. Boyter, Dallas, N. C.*

We Put an Iron Guide On Worn Parallel Shoes

THE STRAP-IRON U is welded to the back of the picker foot on the under side.

Our looms used to give a lot of trouble when the parallel shoes became worn. Worn parallel shoes caused the picker stick to whip to the side and throw a "crooked" shuttle.

Results were: broken and damaged warp ends, broken filling, worn shuttles, and slam-offs.

We rebuild our parallel shoes now to correct the trouble. When a dozen or more shoes are removed from the looms, we repair all of them at once.

We bend a piece of ¼-in. strap iron into a rough U. The U fits under the back end of the parallel shoe and extends 2 ins. over the top surface on each side.

We tack-weld the strap iron to the parallel foot, and the job is finished.

When the rebuilt parallel foot is replaced on a loom, the picker stick is guided in a straight line to throw a true shuttle.

The cost of repairing the shoe is small, but the results are worth many times the cost. *Carl F. Franzen, Joanna, S. C.*

How To Use Hot Air To Heat Pulley Hubs

Ever have trouble moving a tight pulley along a shaft? Here's how we heat the hubs to expand them and make moving pulleys easy.

Wind a length of copper tubing twice around the hub, one pass on each side. Attach a 6-in. length of rubber hose to one end of the tubing, and connect this hose to a short length of iron pipe that is connected to the compressed-air supply.

Play a blowtorch on the section of iron pipe, and there will be a continuous flow of hot air through the tubing and around the pulley hub. Be sure that the end of the tubing directs the hot air away from the work area. *W. E. Warner, Essex, England.*

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Purolene is one of a group of Pure Oil *multi-purpose* industrial lubricants, each designed to do many different jobs equally well. You can use them to simplify your lubrication practice and reduce your lubricants inventory.

So effective is the multi-purpose character of the lubricants in this group that *seldom more than six are needed to do the entire lubrication job for even a large plant!*

Learn how to use this versatile line to start a new labor-saving, money-saving lubrication program in your plant. Use the coupon below.

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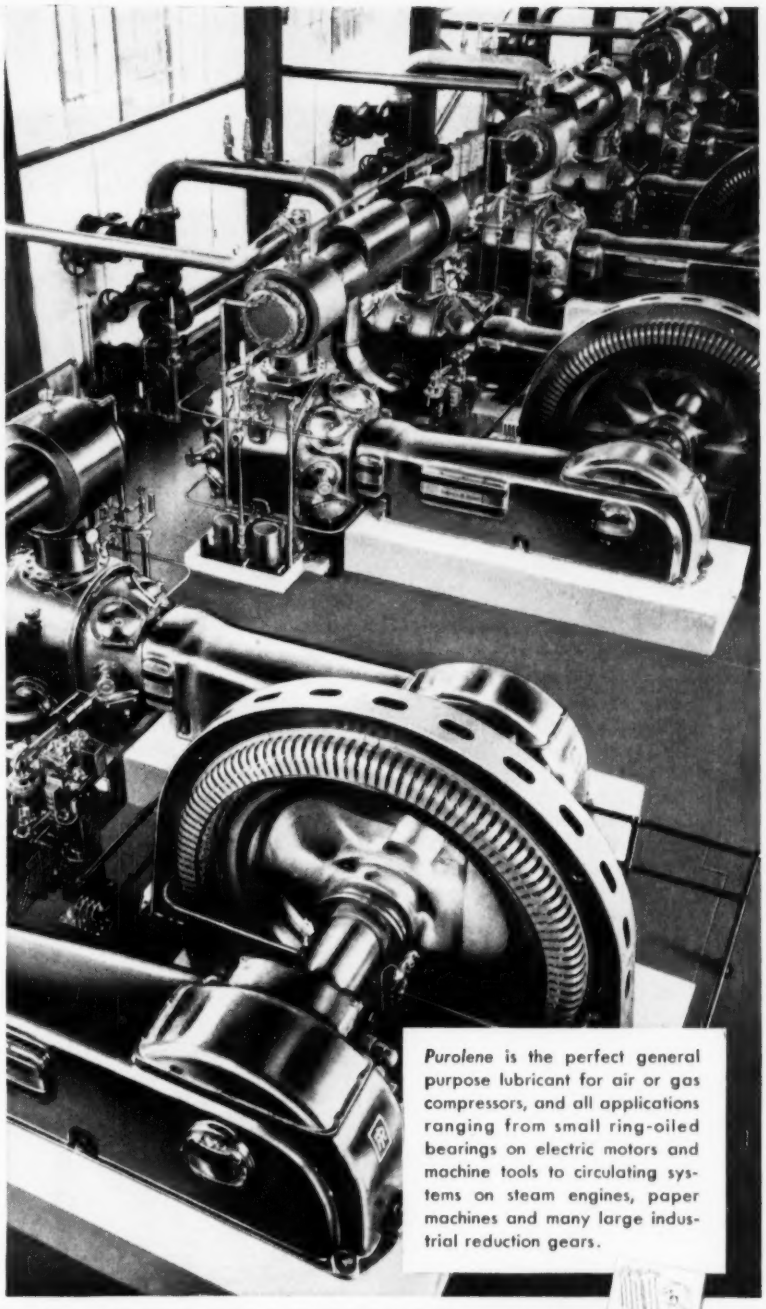

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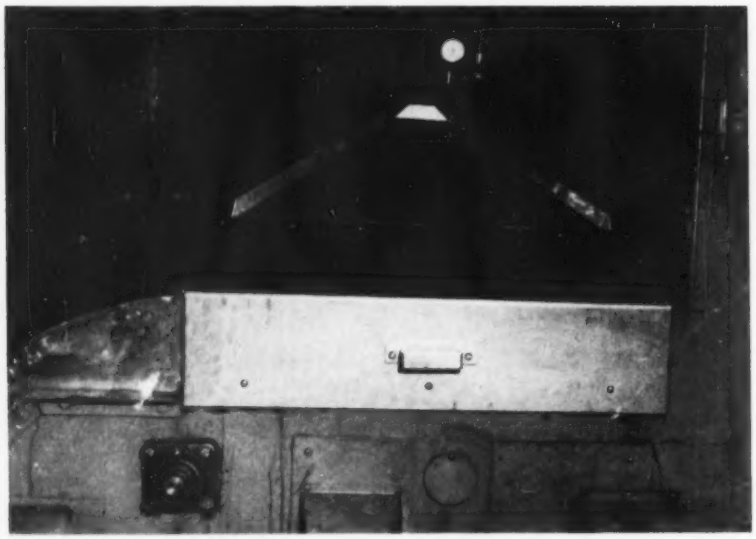
Kinks and Short-Cuts

Raise Tinting Nozzle for Uniform Distribution



SHEET-METAL ENCLOSURE lifts the spray nozzle about 9 ins. and, with a slit-type nozzle set diagonally, assures uniform tinting.

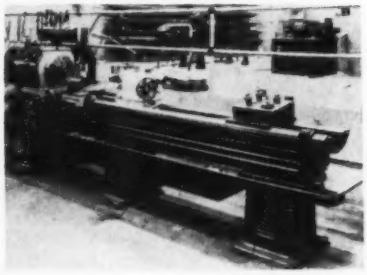
We weren't satisfied with our tinting. The tint wasn't spread out enough over the lot.

So we changed the nozzle on our tinting machine from a round one to a straight slit. We set the new nozzle to spray diagonally across the fibers as the sheet passed through.

And we raised the nozzle about 9 ins. to get a better distribution of tint. We had to make a sheet-metal enclosure, of course, and the enclosure is shown in the accompanying picture.

The tinter works much better now. Distribution of tint is more uniform, and we don't have lots that miss color or have too much.

Try Felt Pads In the Machine Shop



FELT PADS can be used for mounting heavy equipment in the machine shop, as well as in production departments. Vibration and noise are reduced, and machines can be repositioned easily. *The Felters Co.*

In Spinning and Twisting

It's very easy for the worsted spinner to adjust twist only for production and ends down.

But twist has an effect in finishing some fabrics; good cover is hard to get with tightly twisted yarns.

If, however, you don't want the surface of the fabric to be rough with fibers, follow this rule: Spinning twist should be 1½ times ply twist if ply twist is in the opposite direction to spinning twist. *J. G. Bradford, Halifax, England*

Use a Special Jig to Re-Cover Brake Bands

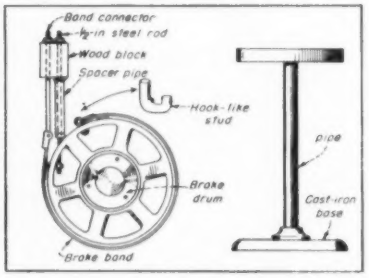
We used to reline our brake bands for C&K W-3 looms with cork linings by hand. Linings attached to the brake band this way often bulged in places and gripped the brake drum on the loom in only a few places. When this happened, the linings wore out rapidly.

We made and now use a jig that makes brake linings fit perfectly.

The jig is made from a discarded brake drum bolted to a 36-in. length of 1¼-in. pipe. The other end of the pipe is welded to a 50-lb. round cast-iron base of 24-in. dia.

A hook-like pin or stud is welded to the outside of the drum to hold the pivot end of the brake band. A ¼-in. hole is bored 1½ ins. from the curved surface of the welded stud at a 90° angle to the drum radius. The inside of the hole points toward the stud and, of course, the outside points away from the stud.

A ½-in. rod 15 ins. long is threaded on one end to be bolted through the brake drum. The other end of the rod is threaded for 5 ins.



THE BRAKE BAND is hooked over the stud in the brake drum, the new cork lining is placed between the brake band and the brake drum, and a nut is placed on the connector and tightened. Then the brake lining is drilled accurately.

The rod is bolted to the brake drum with two nuts, which must have, of course, the same thread diameter as the threads on the rod.

A piece of pipe 6 ins. long is cut to fit over the rod.

A 4-in. block of wood is cut from the large part of a picker stick, and two ½-in. holes are bored lengthwise through the block.

The 6-in. length of pipe is placed over the 15-in. rod for a spacer, a cut washer is added, and the wood block is bolted on the rod.

To reline a brake band, the pivot end of the brake band is hooked to the stud in the brake drum, the new cork lining is placed between the brake band and the brake drum, and the rod on the end of the brake band is passed through the second hole in the wood block.

A nut is placed on the end of the brake-band rod and tightened with a ⅞-in. wrench until the brake band fits snugly against the brake drum.

Holes are drilled through the new lining with an electric drill by guiding the drill bit through the rivet holes in the brake band.

Then the band is removed and the rivets inserted.

The jig helps us do a good job of replacing brake linings, and replaced linings wear evenly at all points. *Keith Fawcett, Huntingdon, P. Q.*

PFIZER CHEMICALS for the TEXTILE INDUSTRY

How Can They Help You?

PFIZER GLUCONIC ACID, Sodium Gluconate, Ammonium Gluconate and Glucono Delta Lactone are extremely mild, non-toxic and non-corrosive. The sequestering ability of the gluconate radical plus their mildness make them highly valuable to the textile industry. They make possible clearer, sharper colors in dyeing by inactivating trace metals and are used as iron sequesterants in kier boiling and mercerization. Ammonium Gluconate and Glucono Delta Lactone prove ideal as acid forming catalysts for printing pastes.

PFIZER OXALIC ACID ranks high in the textile industry as a remover of rust spots and as a bleaching agent. This acid and its derivatives are also utilized to advantage in the preparation of alum and chrome mordants for dyeing.

PFIZER CITRIC ACID AND SODIUM CITRATE are becoming increasingly important in many textile processes because they form water-soluble complexes with metallic ions, such as iron and calcium, in neutral or slightly alkaline solutions. Being a mild organic acid, Citric Acid is also of interest as an acidifier in dyeing.

Write Department T for Bulletins #6, "Ammonium Gluconate and Gluconic Acid in Textile Printing," #27, "Glucono Delta Lactone in Acid Colloid Resins," #33, "Gluconic Acid and Derivatives," #34, "Oxalic Acid."

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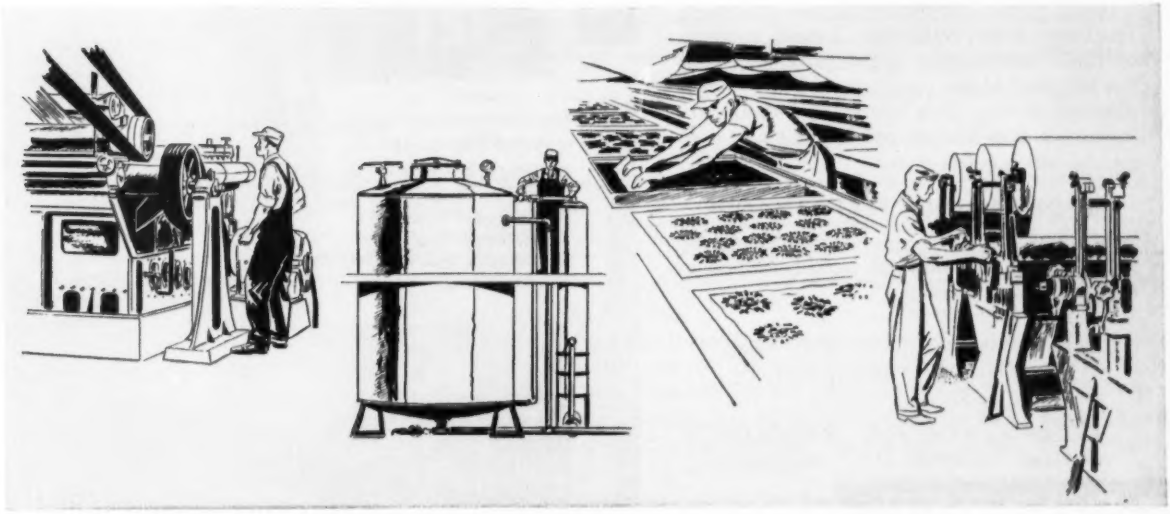

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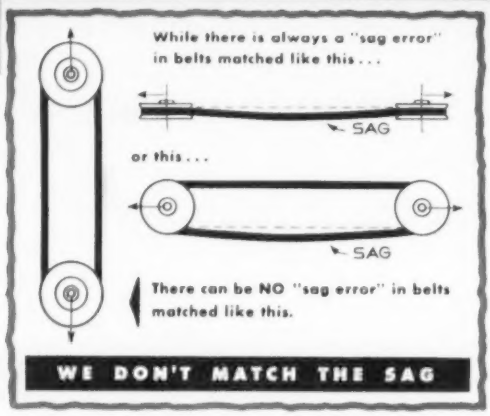
WHAT DURKEE-ATWOOD VERTICAL MATCHING DOES FOR D-A MULTIPLE V-BELTS


While there is always a "sag error" in belts matched like this . . .
SAG
or this . . .
SAG
There can be NO "sag error" in belts matched like this.
WE DON'T MATCH THE SAG

Durkee-Atwood's new vertical V-belt matching machine eliminates the sag error always present when V-belts are matched on horizontal matching equipment. Calibration of true running length by individual testing assures equal power transmission from all belts on multiple belt drives. The D-A vertical matching machine tests belts under varied tensions up to 450 lbs. per belt, tests for vibration, and detects possible internal imperfections.

WHAT DURKEE-ATWOOD MULTIPLE V-BELTS WILL DO FOR YOU

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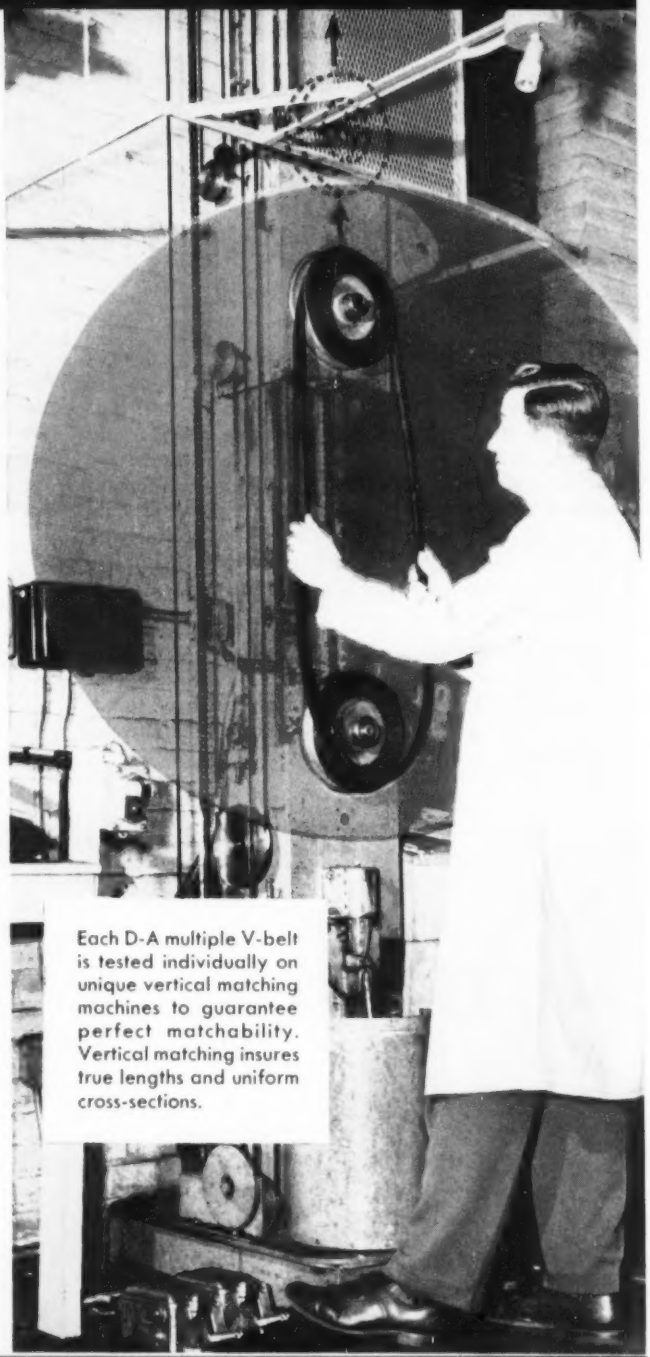

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TEXTILE WORLD, A McGraw-Hill Publication, New York 36, N. Y. OCTOBER, 1953

Outstanding TRADE LITERATURE *Free for the Asking*

NO REPEATS . . . Listed here for October are current bulletins reviewed by the editors of TEXTILE WORLD. To get the ones you need, circle the number on the Reader-Service card, as described on the preceding page.

TEXTILE MACHINERY AND AUXILIARY EQUIPMENT

Tower coaters are described in a bulletin from John Waldron Corp. Diagrams show how tower coaters are used to surface coat nonpermeable webs of cellophane and glassine and to impregnate glass, nylon, rayon, and other fabrics. **(F-1)**

Portable pH meters are described in a pamphlet issued by Beckman Instruments, Inc. The pH meters include a line-operated model for routine measurements in the control laboratory and two lightweight portables for plant and field applications. **(F-2)**

Dye machines for open-width carpet dyeing are described in a brochure released by Rodney Hunt Machine Co. Sizes are available in open widths from 6 to 20 ft. The machine is constructed in a double-shell form and arranged to allow circulation at the front and rear. **(F-3)**

Plastic rolls are described in a brochure by Rodney Hunt Machine Co. The rolls have high heat resistance and are inert to practically all chemicals. They are notable for their release properties. Even adhesive tape won't stick to them. **(F-4)**

Ribbon- and broad-loom development is described in a brochure dealing with the history of the Société Anonymé Adolphé Saurer. Ribbon looms were first made by the company in 1910, and broad looms in in the 1920's. Today it makes high-speed ribbon looms and looms without a superstructure for heavy fabrics. **(F-5)**

Spray dryers are described in a booklet from Foster D. Snell, Inc. Spray dryers are used in manufacturing powdered and bead soaps and synthetic-detergent beads. A diagram compares the conventional method of drying products with the spray-dryer method. **(F-6)**

An air hoist capable of lifting 1,000 lbs. is described in a pamphlet from Aro Equipment Corp. The hoist weighs 28½ lbs. and lifts 1,000 lbs. at 40 ft. per min. A throttle control regulates the length of lift or drop from 0 to 40 ft. per min. It can be installed by one man and has safety features. **(F-7)**

Mechanical air controls are described in a catalog from Mechanical Air Controls, Inc. The MAC valve has a full-pipe orifice area with a maximum of straight-through flow and a minimum of parts. **(F-8)**

Electronic weighing of tanks, bins, and hoppers is described in a bulletin from Baldwin-Lima-Hamilton Corp., Philadelphia 42, Pa. The bulletin covers installation (mounting, temperature effects, and vibrations), indicating and recording instruments, weighing accuracy, and engineering services. **(F-9)**

Stainless-steel storage tanks in many sizes, shapes, and types are described in a bulletin from Cherry-Burrell Corp. Tables of typical tank dimensions are included; and other accessories, such as air agitators and automatic-level indicators, are depicted. **(F-10)**

A moving-bottom box that automatically raises and lowers materials to a convenient working level is described in a folder from American Machine and Foundry Co. The unit can be used for full or empty bobbins. The materials rest on a platform or in a tote box mounted on ball-bearing casters. The rack can be moved from one department to another. **(F-11)**

"Electronic Controls Cut Production Costs" is the subject of a handbook published by Photoswitch, Inc. Case studies (46 of them) explain how standard packaged electronic controls have solved problems in weighing, counting, measuring, timing, and cycling. **(F-12)**

Industrial instruments are described in a catalog from Foxboro Co. The instruments—which measure temperature, pressure, flow, liquid level, humidity, liquid density, pH, and conductivity—include recorders, indicators, air-operated controllers, control valves, and electric-operated controllers. **(F-13)**

Industrial thermometers are described in a catalog from Precision Thermometer and Instrument Co. The technical data includes details of construction and temperature-scale ranges. The various forms of mercury-in-glass thermometers are made in conventional 7-in., 9-in., and 12-in. cases. **(F-14)**

D.C. motors (½ to 300 hp.) and d.c. generators are described and illustrated in a bulletin prepared by Louis Allis Co. Cutaway drawings show mechanical construction and enclosures for different

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Reader Service (Continued)

Centralized lubrication is the subject of a bulletin from Farval Corp. Cross sections of measuring valves are shown. Automatic pumps, spray valves and fittings are shown along with applications of centralized lubrication to various machines. **(F-17)**

"**Instruments for Modern Measurements**" is the title of a booklet produced by Brush Electronics Co. Thirty-seven different instruments specially produced for electrical measurements, physical measurements, textile measurements, and electro-acoustical measurements are described. **(F-18)**

SUPPLIES AND CHEMICALS

Roller-chain wheels with taper bushings are described in a booklet from Link-Belt Co. These chain-sprocket wheels are designed to provide secure mounting on shafts equivalent to a shrink fit. Setscrews force and hold the split tapered bushing. **(F-19)**

"**Sodium Perborate**" is the subject of a brochure from Buffalo Electro-Chemical Co., Inc. Becco's sodium perborate contains 10% active oxygen by weight. It is a mild oxidizing agent used in the textile industry in dyeing, bleaching, and spotting. **(F-20)**

Metal cleaners and solvents are described in bulletins from Harco Chemical Co. The metal cleaner is a slow-evaporating solvent recommended for degreasing and cleaning electrical equipment and painted surfaces. It is used in tank degreasing of tools and small parts and in spraying, brushing, or dipping methods. **(F-21)**

Friction clutches are described in an illustrated data sheet from Morse Chain Co. The friction clutch provides overload protection for a variety of machine drives by functioning as an automatic shear-pin mechanism. **(F-22)**

Alkyl aryl sodium sulfonate detergents are the subject of a technical bulletin prepared by Universal Detergents, Inc. Two types are described—Udet and Udex. They are used for wetting, emulsifying, emulsion preventing, dispersing, and foaming. **(F-23)**

Harness- and dobby-sheave specifications are listed in sheets from G. F. League Mfg. Co. Thirty-two styles and sizes of dobby sheaves and 14 styles and sizes of harness sheaves are listed. Stock sizes represent 90% of all sizes sold. **(F-24)**

Polystrene emulsions are described in a technical bulletin from Koppers Co., Inc. The uses and applications of these emulsions in reinforced plastics, water-base coatings, paper coatings, and textiles are described. Instructions for use of the emulsions are given along with tables listing compatible organic and inorganic pigments. **(F-25)**

Taper-lock sprockets and interchangeable bushings are the subject of a bulletin from Dodge Mfg. Corp. The pages contain data on dimensions, number of teeth, list prices, sprocket numbers, bores available, weights, and cross-sectional drawings of sprockets and bushings. Roller-chain drives are also described. **(F-26)**

Tetrafluoroethelene resin for impregnating and coating woven glass fabrics is the subject of a bulletin from Fabrics Div., E. I. du Pont de Nemours and Co., Inc. The electrical and mechanical properties of coated fabrics are listed, with the chemical and solvent resistance, temperature characteristics, and anti-friction properties. **(F-27)**

Aldehydes are the subject of a book from Carbide & Carbon Chemical Co. Physical properties, shipping data, specifications, and test methods for aldehydes are given. Aldehydes are used in the production of protective coatings, dyes, plastics, and textiles. **(F-28)**

Textile processing agents to improve sewability and seam efficiency and to upgrade fabrics are described in data sheets from Moreland Chemical Co. Morulube BA is applied to wool, wool-

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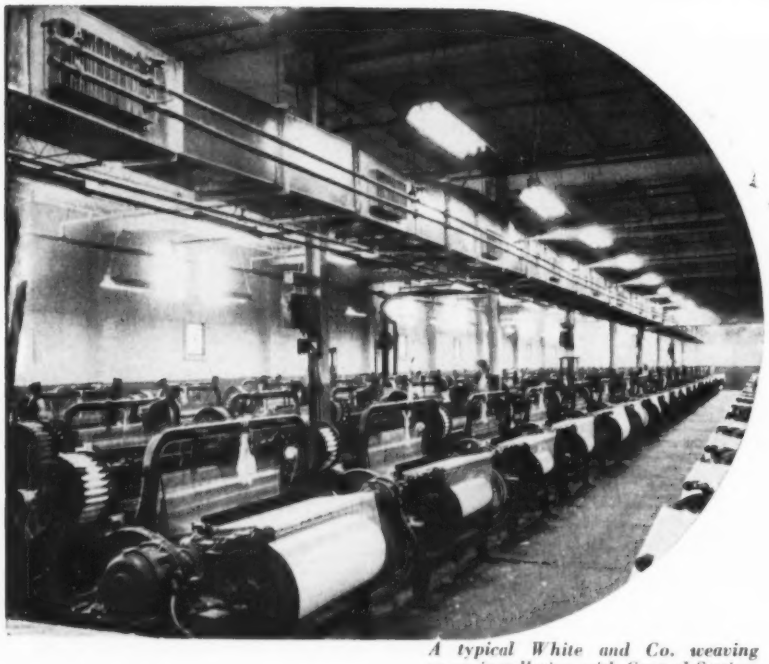

A typical White and Co. weaving room installation with Central Station.

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Reader Service (Continued)

synthetic, and cotton fabrics and does not affect the hand. Morofin R is a saturated fatty polyester to add softness and fullness to yarns and fabrics. **(F-29)**

Polyvinyl acetate solid resin is described in a bulletin from Colton Chemical Co. The bulletin describes the properties, uses, and applications of Vinac beads. They are available as soluble solvents and alkaline-soluble types and are used to produce coatings, sizings, and special decorative finishes. **(F-30)**

"Caustic Soda" is the title of a manual compiled by Columbia-Southern Chemical Corp. Chapters are devoted to caustic-soda production, uses, forms and grades, shipping and handling, and economics of solid and liquid caustic. Tables outline properties of caustic soda and data on methods of analysis and mixing caustic-soda solutions. **(F-31)**

Cleaners of every kind are described in a catalog from Puritan Chemical Co. Industrial floor cleaners, soaps, waxes, floor sealers, degreasers, fabric cleaners, metal polishes, soot removers, disinfectants, insecticides, and janitor equipment are of special interest to textile men. **(F-32)**

ENGINEERING AND MAINTENANCE

Industrial ventilation and air movement is the subject of an illustrated guide supplied by Aerovent Fan Co., Inc. Engineering, installation, and operating data for all standard and special-duty fan applications are given with details for calculating duct sizes, friction losses, performance, and horsepower requirements. **(F-33)**

Air-handling units are described in a bulletin from Westinghouse Electric Corp. Detailed installation possibilities are given for central air conditioning, exhausting heat or vapor fumes, and ventilating requirements where cooling is not needed. Sectional construction, thermal and acoustical insulation, and maintenance accessibility are also covered. **(F-34)**

Lubricated flexible couplings are the subject of a publication prepared by The Texas Co. Various types of couplings and how to service them are described. The type of lubricant, the methods of sealing, and the means for lubrication are discussed. **(F-35)**

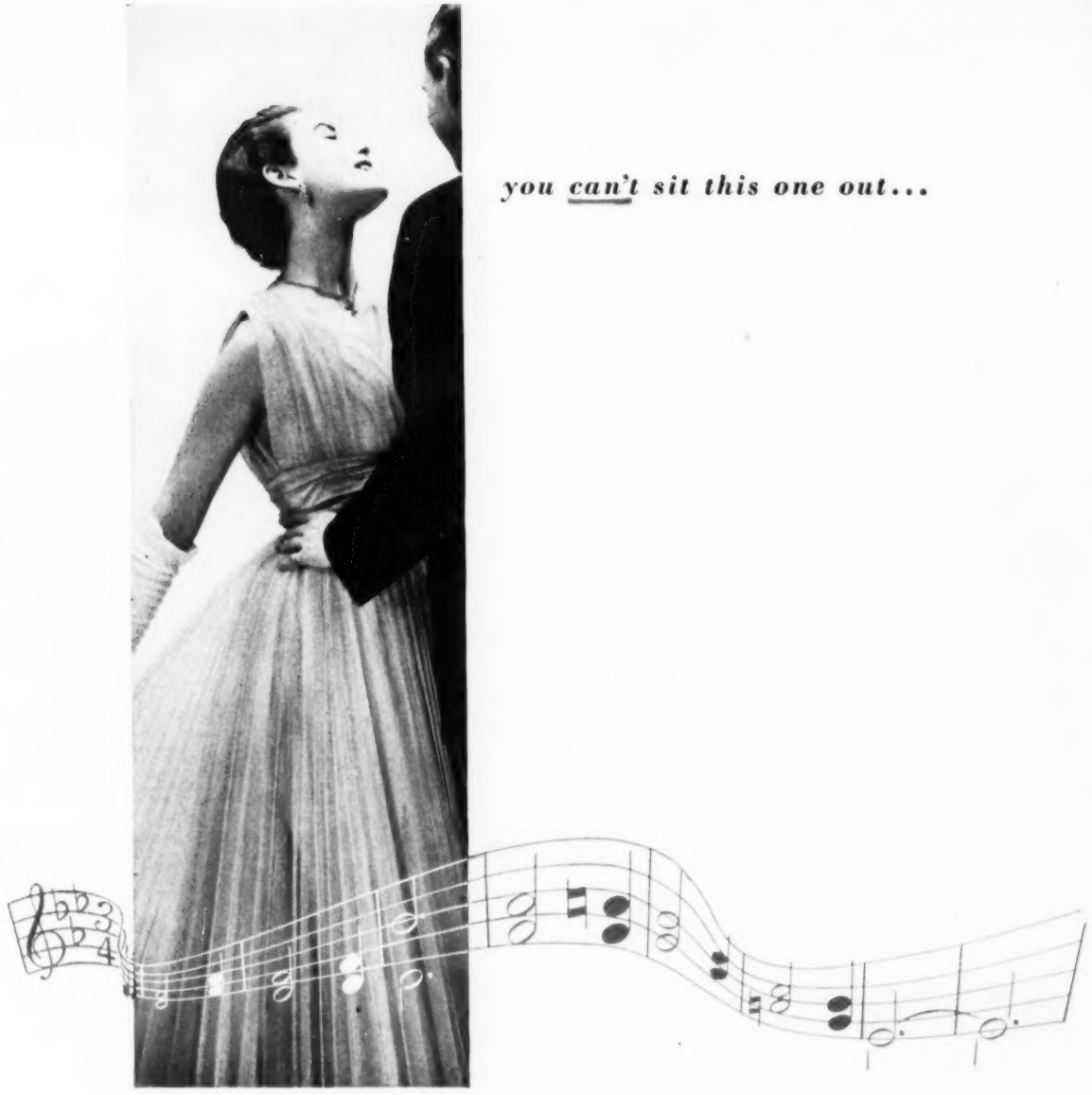
Strainers to remove fine suspended particles from raw or process water, ammoniacal liquor, and other liquids are described in a booklet from S. P. Kinney Engineers, Inc. The strainers are constructed in 2- to 36-in. pipeline sizes and insure a steady flow of clean water from rivers, lakes, or wells. **(F-36)**

Steam boilers are the subject of a bulletin from Means-Kane-Ofeldt Div., S. T. Johnson Co. These boilers are designed for oil and combination oil-gas firing. Attention has been given to the balance between water-backed and steam-backed heating surface to provide ample steam storage. **(F-37)**

A wall-washing machine is illustrated in a brochure from Ross and Story Products Corp. The portable, nonelectric machine offers many advantages over the hand-washing method. Walls can be washed at a cost of less than 4/10¢ per square foot, including detergent cost. **(F-38)**

Coils for air-conditioning systems are described in three bulletins from United States Air Conditioning Corp. Blast-heat coils are designed for heating, drying, and tempering where high or low steam pressure is used. Extended surface coils are used for heating and cooling with water. **(F-39)**

Air hoses for industrial jobs are the subject of a bulletin issued by Quaker Rubber Corp. The bulletin includes cross-section and cutaway photos, performance data, constructions, sizes, weights, working pressures, recommended uses, and types of couplings best suited for the specific hose. **(F-40)**

Discharge of harmful wastes into state and municipal sewer systems is the sub-

you can't sit this one out...

Pleats that won't sit out when they're sat *on* are a boon that women have learned to look for—and are willing to pay for! And they're just one of many pace-setting advantages you can build into the fabrics you create by using Du Pont's "modern-living" fibers.

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Use Du Pont modern-living fibers for the extras that spell a fabric success. Count on Du Pont's experience in fiber research to help you keep pace with the more demanding needs of today's customers.

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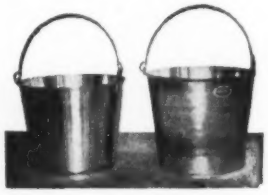
— 18 gauge, polished outside, top edge doubled metal flanged out $\frac{1}{8}$" at 90°. Has 2 stainless steel tubular handles. Foot is 12 gauge polished stainless steel either spot or tack welded to container and sealed with solder. Capacities: 10 gals. (14" x 16"), 15 gals. (16" x 18"), 20 gals. (18" x 19"), 25 gals. (20" x 20"), 35 gals. (21" x 24"), 50 gals. (22$\frac{3}{4}$" x 30").

STAINLESS STEEL PAILS

drawn in one piece (seamless), with bail handles, come with or without foot—unpolished, or polished inside, or outside — or both. They run in capacities of 12, 16 or 20 quarts.



MIXING AND STORAGE TANKS

Come in four styles: flanged and dished bottom, flanged bottom—flat or pitched, disc bottom—flat or pitched, cone bottom. Capacities: 25-50-75-100-150-200-250 and 300 gallons. Two styles of pipe legs (either with floor flanges or adjustable sanitary feet)—or with platform lugs or removable stand. Tanks 25 thru 100 gallons are of 16 and 18 gauges—and from 150 through 300 gallons they are of 14 and 16 gauges (depending on style of bottom). Extras include. 1 piece flanged cover, hinged cover, and motor bracket.

Manufacturers of modern metal equipment for wet processing uses, including Dye Jig Enclosures, Dye Tubs and Becks, Wash Tubs, etc., of stainless steel and other metals that resist corrosion under most alkali and acid conditions.

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New York State: Sanders Industrial Equip. Co., 1351 Broadway, Albany 4, N. Y.

South: Henry H. Hersey Co., 44 Norwood Place, Greenville, So. Car.

New England: Harris & Underhill, 446 Statler Bldg., Boston, Mass.

Reader Service (Continued)

ject of a memo from Builders-Providence, Inc. An automatic control system is of value where states and municipalities regulate the discharge of harmful wastes into sewer systems. Details and a flow diagram are contained in the memo. **(F-41)**

Fire pumps are described in a bulletin from Ingersoll-Rand Co. Cross-sectional views, descriptions of design and construction, and performance of pumps that have been approved by the National Board of Fire Underwriters are given. The pumps can be supplied with fire fittings and are applicable for booster service. **(F-42)**

GENERAL

Fiber-Glass yarns for electrical insulation are described in a folder from the Fiber-Glass Div. Libby-Owens-Ford Glass Co. Yarns with tensile strength of 250,000 lbs. per sq. in. permit tight, fast wire covering at high operating temperatures. The yarns can be woven into tapes and cloth, braided into sleeving, and braided over wire. **(F-43)**

An office machine that will print copies of any written, drawn, or printed material is described in a leaflet from Eastman Kodak Co. A copy of any material up to 8½x11 ins. is prepared within 1 min. at a low cost. **(F-44)**

Safety is the subject of a manual by the National Safety Council. The practical experiences of workers, supervisors, and safety specialists have established the safe practices covered with special sections on machine operation, hand tools, power tools, protective clothing, fire prevention, and materials handling. **(F-45)**

The nylon sewing problem is dealt with in a booklet issued by Singer Sewing Machine Co. The causes of puckering are described, and remedies are suggested. Seam slippage, skipping, bobbin spilling, thread fraying, and fusing are dealt with and possible remedies are described. **(F-46)**

Cotton warehouse efficiency is the subject of a handbook issued by USDA. The book tells plant managers what to look for to improve efficiency and cut costs. Operations that use more labor than necessary, proceed too slowly, or cost too much may be improved by better distribution. **(F-47)**

Fork trucks are described in "Material Handling News," issued by Clark Equipment Co. X-70, an experimental model, is described, and readers are invited to submit their approval or disapproval. Electric, gas, gas-electric, diesel, and L-P-gas trucks are illustrated and described. **(F-48)**

Fire hose is the subject of a bulletin from Quaker Rubber Corp. Some of the fire hoses described are: chemical, booster, single-and-double-jacket cotton, rubber lined, flat folding to conserve space, and engine suction. Construction, performance data, sizes, and weights are listed. **(F-49)**

Insulation of metal buildings with a superfine blanket form of fiber glass is the subject of a folder from Fiber-Glass Div., Libby-Owens-Ford Glass Co. The blankets are supplied in 300-ft. lengths, in widths of 18, 24, 36, 48, and 72 ins. to insulate for heat and noise control. A square foot weighs only an ounce, is fireproof, and does not rot. **(F-50)**

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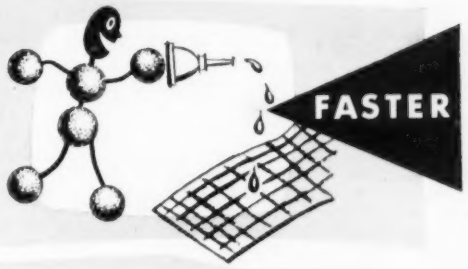
Fibers "adjust" easily, "slide" readily because Twitchell Oils impart superior lubricity. Speed-slowing, troublesome sticking at the shoes is avoided. Rejects or reruns due to fabric distortion are minimized... thus further assuring maximum production per range.



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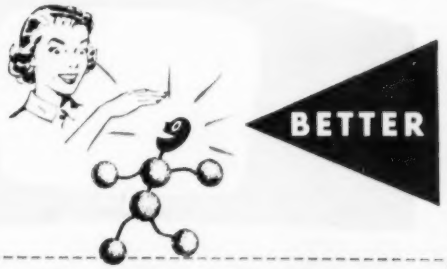
Twitchell Oils give you the hand you want—the hand that appeals to buyers. This fourth property of softness permits a reduction in softening agents normally used. In many cases, maximum savings are achieved through complete elimination of other softeners.



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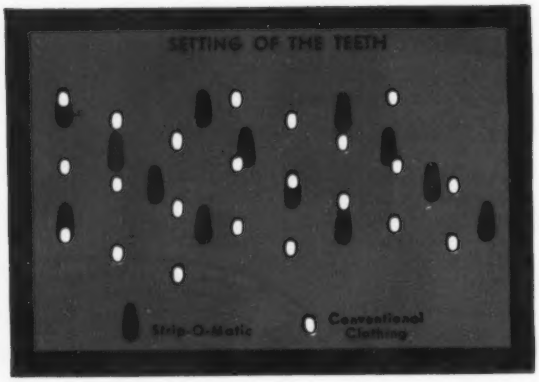
STRIP-O-MATIC Card Clothing



A THOROUGH TEST WILL CONVINCE YOU

All the attention that has been focused on carding by the recent meeting of the Textile Institute, and the research that is being conducted by some of the colleges, points the way to the savings that can be realized through modern and efficient carding methods. Those who have tried and thoroughly tested STRIP-O-MATIC Card Clothing are realizing great savings.

STRIP-O-MATIC reduces down time for stripping, cuts stripping waste and, at the same time, improves yarn quality. This has been proved in mill after mill, yet it takes a thorough test to show all of STRIP-O-MATIC's benefits. For example, if you are going to get the advantage of the long runs between stripping that STRIP-O-MATIC can give you, the stripping cycle must be extended to the maximum. If you strip just as often anyway, only the savings in stock can be realized. STRIP-O-MATIC under ordinary operating conditions, will increase the runs between stripping from 300 to 500% (often more).

The card settings and installation data for such a revolutionary card clothing are naturally a little different, but full instructions come with STRIP-O-MATIC and any necessary changes for your particular conditions can be quickly determined. There are other slight but important operating differences between STRIP-O-MATIC and conventional clothing, but there is *nothing* new for your operators to learn. STRIP-O-MATIC runs basically the same as conventional clothing, yet provides better yarn quality with far longer runs between stripping and with considerable reduction of waste. Try it. Test it. Keep complete records. And you, too, will be convinced.

Sincerely,

E. Allen Snape Jr

President

MANUFACTURERS OF QUALITY CARD CLOTHING FOR OVER 60 YEARS

*Patented®

BENJAMIN BOOTH COMPANY, ALLEGHENY & JANNEY STS., PHILA., PA. Booth

Pointers for Supervisors

(*Continued from page 143*)

The supervisor can be of great help to the termination interviewer by putting his real opinion of why the employee quit on the termination slip he makes out. Such notes as "Personal" or "Job too hard" don't really tell much. What were the particular personal reasons, and why or how was the job too hard? However, it would be expecting too much of human nature to ask the supervisor to quote some such reason as "Supervisor unfair" or "Supervisor didn't know his own job or mine either," and for that we rely on the termination interviewer. Moreover, by seeing all employees who voluntarily quit, the termination interviewer gets an over-all company picture that he can interpret to top management as well as to the individual supervisor.

It has been discovered that, generally speaking, men quit because of job reasons while women employees tend to quit for personal reasons.

Among the more usual reasons for quitting are:

Job conditions: working conditions, monotonous work, unexplained interruptions in scheduling the work, etc.

Supervisory conditions: lack of leadership, unfair treatment, poor understanding of the employee's job problems by the supervisor, inadequate training by the supervisor.

Relations with other employees: not being made to feel a member of the group, not being helped by other employees.

Personnel policies: poor pay, inadequate introduction to the job, no method of registering complaints.

Community reasons: poor or expensive living conditions, transportation, shopping, recreation, education, and others.

Other job opportunities: plentiful jobs in the community or the area with better wages and/or better working conditions.

Some of these reasons, such as wages, personnel policies, and working conditions, can only be cured by the action of top management; but others can be cured or alleviated by the supervisor.

The supervisor can certainly see that the employee understands his job, that he is properly introduced to it, that he receives the necessary training, that he meets the other employees and is given an opportunity to become one of the group, and that he is fairly treated and made to feel that the supervisor takes an interest in him and in his performance. Naturally, no supervisor can combat labor turn-

HOW MUCH OF YOUR POWER COST IS DUE TO FRICTION?

As any textile plant operator knows, that's a tough question to answer with absolute accuracy. However, we do know that an appreciable amount of the power used in a textile plant is wasted in overcoming unnecessary friction . . . *power-stealing friction* that occurs when thousands of spindle bearings, line shafting and other moving parts are improperly lubricated.

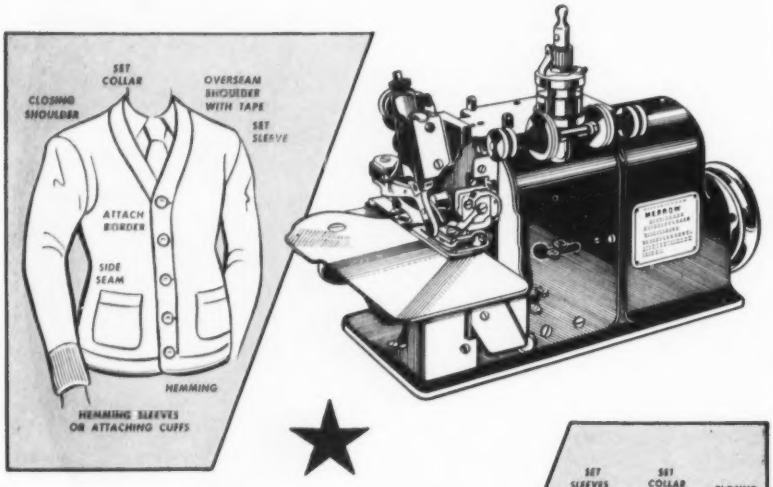
To be sure you're keeping friction down to an absolute minimum, rely on the distinct, specialized lubricants that make up today's regular Cities Service line for the textile industry. Besides helping to reduce friction, Cities Service Lubricants will keep any machine's bearings, shafts and textile output cleaner, and give *more safe hours* of service. This complete Cities Service line provides money and time-saving one-source buying for you, too.

For more complete information, or better still, for the invaluable service of a qualified Cities Service Lubrication Engineer, write to the Cities Service Oil Company, Dept. J27, Sixty Wall Tower, New York City 5, New York.

CITIES SERVICE

QUALITY PETROLEUM PRODUCTS

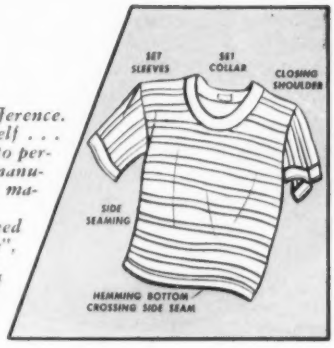
Mr. Outerwear Manufacturer:
MERROW CLASS A MACHINES
Can Boost Your Production



It's their versatility that makes the difference. "Merrows" don't collect dust on the shelf . . . their flexibility enables the same machine to perform a variety of operations. To you as a manufacturer this means higher production per machinery dollar invested.

Simplicity and rugged design of high speed Merrow Machines mean minimum "down time", provide you with a bonus in production.

We will be glad to demonstrate the work of these machines on your own garments.



In outerwear manufacturing, Merrow Class A Machines are extensively used on: polo shirts, sportswear, children's and infants' wear, bathing suits, sweaters, trousers and knit dresses. They are used on a wide variety of materials, including woven fabrics, knit fabrics of various construction, cotton, wool, rayon, nylon and other synthetics.

Applications of Merrow Machines include overseaming, hemming, overedging, serging, crochet and shell stitch edge finishing and shirring. Guides are available for attaching tape, cord, elastic, lace, borders, collarettes or rib material.

WRITE FOR FREE
ILLUSTRATED BULLETIN.

TRADE MARK REG
The MERROW
MACHINE COMPANY
ESTABLISHED 1838 INCORPORATED 1904
2803 LAUREL STREET • HARTFORD • CONN.

over by himself; but he can do a great deal to help fight it.

Actually, the place to start fighting labor turnover is when the employee walks in the door of the employment office. He must be quickly and courteously interviewed and have the job adequately explained to him. He must be properly inducted into the company and given what help the training department can give him in preparing him for the job.

If the majority of turnover consists of new employees, those who leave within the first week after being hired, it's fair to assume that the employment office should do a little soul-searching and be sure that it is sending the best possible applicants to the supervisor and is doing its best to eliminate floaters. The same thing applies to the induction program and the training department. But if the majority of turnover is among employees who have stayed on the job long enough to get acquainted with it, then the company's personnel policies and the supervisors' ability might be open to critical examination.

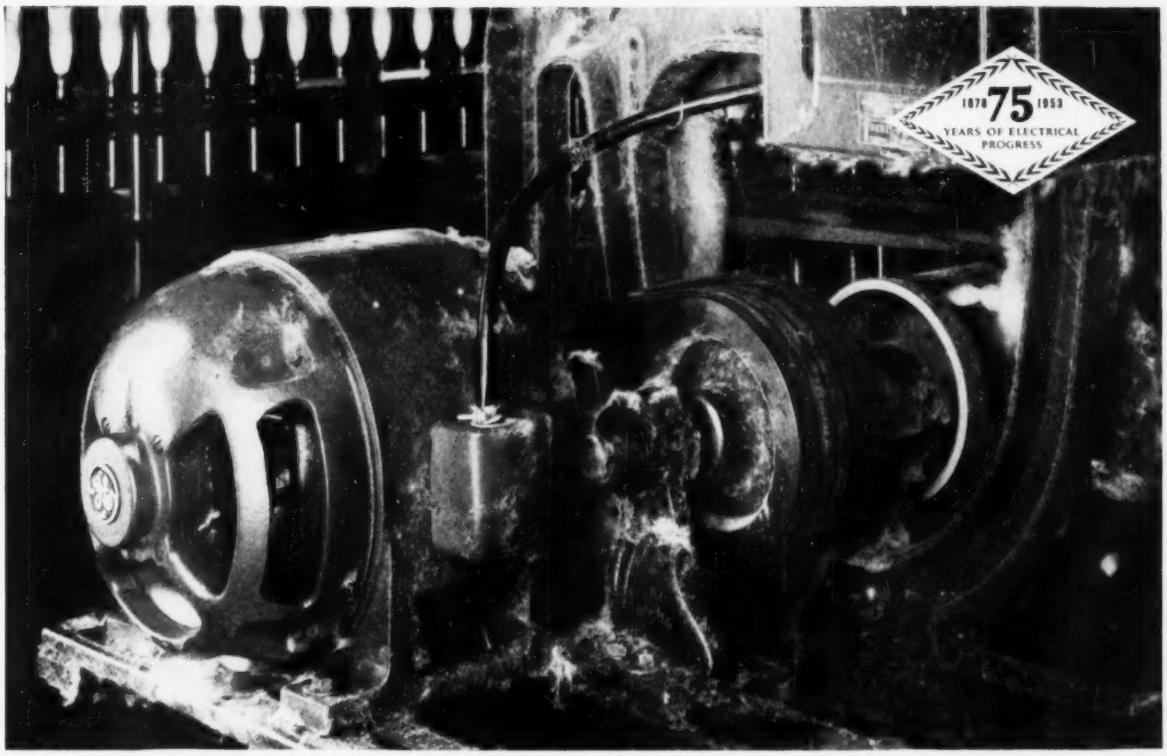
This examination might disclose that the supervisor is not getting proper assistance himself from the personnel department in helping him to do his best job with employees.

Naturally, no company can completely stop labor turnover, no matter how fine its personnel policies or how well trained its supervisors may be. As a matter of fact, a certain amount of turnover is a good thing, as it brings fresh blood into a company.

However, when in any particular company turnover begins to go noticeably above the turnover for that industry, it merits attention. Equally, when the turnover for any particular occupation or department goes above the company average, that, too, deserves study. It may be that the turnover is expected. In any company there are some jobs that are less attractive than other jobs, and a higher rate of turnover is normal. But a supervisor who has a higher labor turnover than other, similar departments will be well advised to wonder if the reasons for the excessive turnover may not lie within himself.

Some authorities feel that there is a definite tie-in between excessive absenteeism and high turnover. The employee who is dissatisfied with his job frequently begins to show his dissatisfaction by staying away from work more than is necessary or normal. Probably some of his absences are for purposes of job hunting.

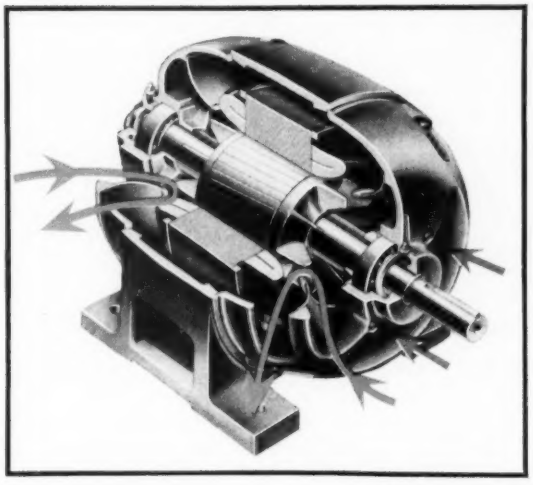
To sum up, labor turnover can be approached by defining it, by discov-



New G-E Screenless Open Textile Motor provides . . .

Quick in-out cleaning action

New cooling system assures positive lint expulsion, minimum cleaning time



The new G-E screenless open textile motor is scientifically designed to provide maximum cooling and positive lint expulsion with greater physical protection. Many combinations of endshield openings and rib widths were tested to determine the most effective self-cleaning cooling system.

Specially-contoured fans pull large volumes of cooling air through wide endshield openings. Air flows unobstructedly through shortest possible air passages, over smooth coil ends, and out discharge openings. This provides maximum cooling effectiveness and quick in-out lint action—with no lint-laden air passing through motor frame—to keep spinning frames, roving frames and pickers operating more continuously with less downtime for cleaning.

YEARS OF SERVICE—THEN EASY RELUBRICATION!

Bearing lubrication is no problem with this new motor. Grease reservoirs hold much more grease than the conventional "sealed" bearing. Eventually, after years of service, lubrication will be necessary to lengthen bearing life. You'll be able to do it with a grease-gun—without tearing down the motor!

The new motor is available now in many standard and special ratings. Bulletin GEA-5837 gives full details. Contact your local G-E apparatus sales office or write General Electric Company, Schenectady, N. Y., for your copy. 654-26

You can put your confidence in—

GENERAL ELECTRIC

Do you get 10 YEARS' SERVICE from your take-up roll covering?

Many mills report using TEXALOX take-up roll covering by CARBORUNDUM for ten years continuously—*without replacement or showing evidence of wear.* Do you get that much service from the roll covering you're using now? Does it give you all the other valuable advantages TEXALOX covering offers? For example:

- **NEVER GETS SLIPPERY OR GUMMY**—outlasts other materials.
- **DOESN'T SHED**—as other paper coverings do.
- **CAN'T RUST**—as metal coverings do.
- **PREVENTS CHAFE AND CUT MARKS.**
- **WON'T WRINKLE OR LOOSEN.**
- **RESISTS OIL AND GREASE**—and never accumulates them.
- **NEVER LOSES** its even, gentle grip on the fabric.
- **ALWAYS DELIVERS** definite lengths of material.

If your present roll covering doesn't offer you these advantages, you'll want to try TEXALOX roll covering—created expressly for the textile industry by CARBORUNDUM. There is a TEXALOX roll covering for each textile type, from sheerest nylon to heaviest duck. It's easy to apply. Try it on your looms—see what an improvement it is over old style coverings. We'll send you a sample length, free of charge. Ask your CARBORUNDUM Distributor—or write Dept. TW 82-31.

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by **CARBORUNDUM**

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ering where it is heaviest, discovering what causes it, and deciding what must be done to alleviate it.

Part of this job must be done by top management, part of it by the personnel department, and part of it by the supervisor. Each one is helpless without the other. But statistical studies, even of the simplest kind, will help define the problem and discover where it exists. The interpretation of the statistics plus the work of the supervisor and the termination interviewer in discovering the causes will provide the remedies for the situation. Comparative studies at intervals of six months or a year will show what improvement is being made.

Lower labor turnover means the supervisor has a steadier, more-stable work force; that he spends less time training new employees; that his department shows improved production and lower costs; and that his own job is easier. By combatting labor turnover, he helps himself.

Dunn System

(*Continued from page 95*)

and the temperature should be raised to 170° F. in 30 mins. The dyebath is run for 30 mins. at 170° F., a sample is taken, and the dyebath is run for 30 mins. more. The speed for the dye machine should be about six turns per minute.

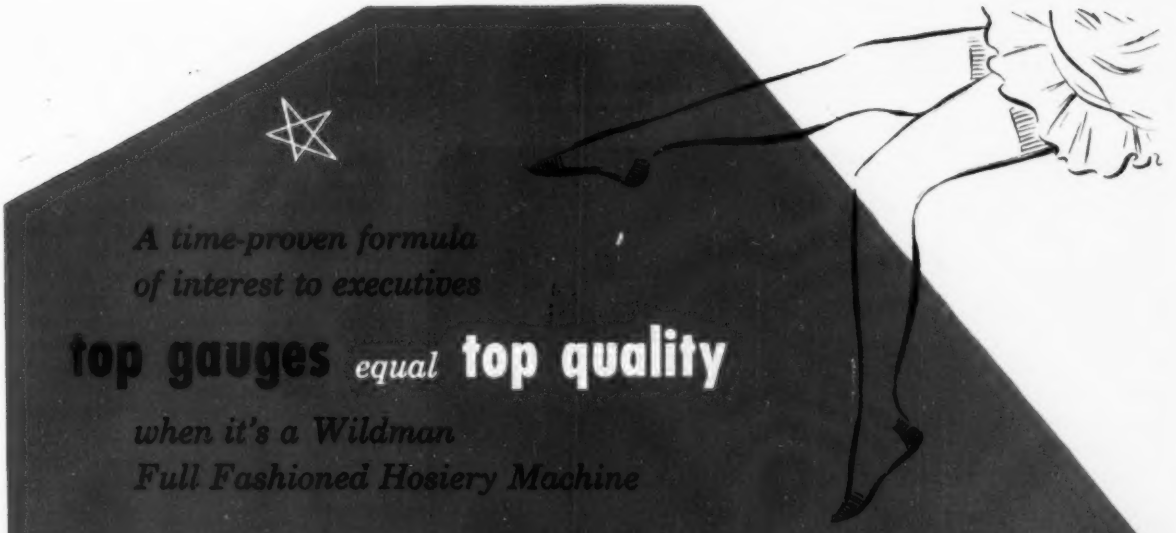
Finishing is done in a 100-lb. machine for 15 mins. at 90° F. with 2 lbs. of resin-base finish and 2 lbs. of wax. As the stockings must be damper for the Dunn method than for other boarding systems, the extractor is run for only 30 secs. Boarding is done on the conventional preboarding machines with the pressure reduced to 15 psi. The thermostat is set so that the timer will start at 238 to 240° F. and run for 1¼ mins. The temperature in the retort will build up to about 246° F. at the end of the steaming. The drying time is about 1 min.

Welt Must Fit Snugly On Preboarding Form

The boarder must not stretch the back portion of the welt. It is easy to stretch the seamed part while the welt is pulled over the form, while the result that the welt won't fit the form snugly and an unsightly piece of fabric is made.

Boarding on the Dunn system takes more time if the stocking is to have a good appearance. A good production for an 8-hr. day is 90 doz. The operator can strip six stockings at once. Preboarding forms should be cleaned at least twice weekly.

Wider forms than usual are used



A time-proven formula of interest to executives

top gauges *equal* top quality

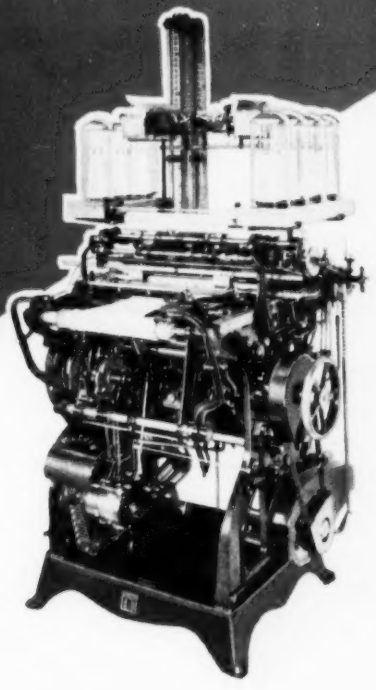
when it's a Wildman Full Fashioned Hosiery Machine

The consumers' demand for top quality hosiery — hosiery with the height of elasticity, beauty, wear — makes the highest gauges the top sellers today.

This top quality is the total of several features they seek. For instance, in the 75 gauge, the same size yarn is used as in the lower gauges, but naturally it is tighter knit. The resulting elasticity determines the comfort, the fit, the pleasure the owner gets from her stockings — and eventually the wear. The 75 gauge will give her these features and it is longer wearing, more resistant to snagging.

Yes, your highest gauges are your market today, and the consumer must be educated to their superior qualities . . . Your assurance of maintaining this top quality in your production is the WILDMAN 75 gauge Full Fashioned Hosiery Machine, because it is time-proven to be an economical, efficient, high production machine — automatic in operation. Inquire today for complete details.

75 gauge



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The vise that's a handy portable workbench

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New No. 40 Tristand Pipe Vise

Easily taken to the job—legs fold in and chain for carrying, tray quickly on and off. Roomy top has pipe rest and efficient benders; tray keeps tools handy—and also makes Tristand extra rigid, won't fold up in use! Tool-steel Longrip jaws—firm grip but easy on polished pipe and tubing. Yoke No. 40, (old TSY-2½) 2½"; chain No. 45 (old TSC-4) 4". Buy these handy worksavers at your Supply House.

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RIDGID
Work-Saver Pipe Tools

for Dunn-processed stockings. The welt is 7⅞ ins. wide, the calf 5¾ ins. wide, and the ankle 3¼ ins. wide.

By using the Dunn system, we have found that stockings do not require folding and dye bagging that formerly caused pulled threads. Bulk intermill shipments of preset gray goods are permitted, regardless of time or distance.

Wet dye goods may be left in the dye bags for various lengths of time. No uneven results are noticed after boarding. Pairing can be done days later with results identical to immediate handling.

Elasticity is improved, and that means a better fit on the leg. The fabric lies flat on the table for better pairing, shipping, and over-the-counter appeal.

Vat Dyeing on Packages

(*Continued from page 97*)

an uneven dyeing, especially if the dye is of a fast-exhausting type.

Dispersing of Dyes Is Good Practice

It is a good practice to make a dispersion of the vat dyes before dyeing, regardless of whether they are pastes or dispersed powders. The dispersion should be made while the yarn is being prepared so that there will be no loss of time.

The dye is weighed out and mixed in a container with water and a small amount of Calgon. It is then heated to the reduction temperature if it is to be dyed by the reduced method, but not over 160° F. With the pigment method, a dyeing temperature from 120 to 160° F. is used. The liquid-to-dye ratio is usually about 10 to 1. This dispersion is allowed to set for 30 mins. with an occasional stirring.

Retarding Agents Must Be Chosen

Many dyers are changing to the newer types of retardants. Some of these newer types have their drawbacks. Many will retard one vat dye and have no effect on another, while a third dye may be nearly destroyed. The only remedy is to learn the individual dye reactions to select the correct retarding agent.

A few vat shades, such as very pale blues or greys, will not dye satisfactorily even with the best selection of retarding agents. In such cases, the soluble vats produce better results.

Pigment-Dyeing Procedure

The following method for pigment

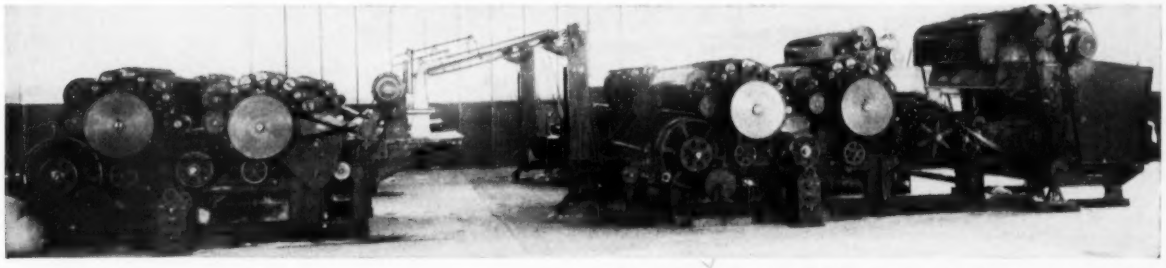
Increase Production

Reduce Costs

Improve Product Quality

with

A Proctor Reprocessing System Designed to Your Needs



Latest design Proctor Duplex Garnett in operation in one of the country's newest all synthetic garnetting plants.

A check of plant after plant where Proctor systems are in operation for reprocessing fibers reveals the same three results in each—increased production . . . reduced operating costs . . . and a better quality finished product.

The reason is two fold: First, Proctor engineers have done more in the development of fiber preparation equipment than anyone else in the world. Second, their extensive knowledge has been used to make certain that each of these systems is best suited to the specific fiber and output requirements of the individual plant.

In recent years—with the tremendous increase in synthetics reprocessing—the developments that have taken place in Proctor equipment are extensive. You owe it to yourself to learn how these late developments can help you to improve the efficiency of your plant and increase your profits. Write today for the very latest information.

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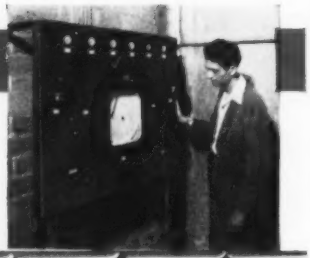
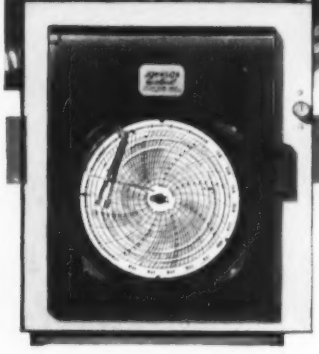
The **AUTOMATIC** answer

to Temperature and Humidity Regulation Problems in Textile Mills . . .





JOHNSON CONTROL

PHOTOS:
Top: Maintenance engineer observing Johnson "Record-O-Stat" which controls and records dew-point temperature.
Center: Typical weave room with Johnson Temperature & Humidity Controllers in Aspirating Cabinets.
Left: H-410 Johnson Aspirating Cabinet.

Johnson Automatic Temperature and Humidity Control equipment is engineered to meet the most exacting requirements. It is truly the *automatic answer* to the problems of regulating temperatures and humidities in textile mills.

For example, Johnson "Record-O-Stats" are the finest available for those applications where temperatures must be controlled accurately and a record kept, important considerations where successful processing depends on the conditions in the work rooms. "Record-O-Stats" make a permanent record of the temperature measured by the sensing bulb. Charts, with uniformly graduated scales, are available in a wide selection of temperature ranges, for either 24-hour or 7-day periods.

Johnson Aspirating Cabinets, to control dry-bulb temperatures and relative humidities in the various work rooms, may be equipped with any of a variety of Johnson temperature and humidity controllers to insure *just-right* conditions which are so necessary in maintaining highest product quality and maximum production.

Johnson Valves and Damper Operators, combined with Johnson "Record-O-Stats", Thermostats and Humidostats to provide true modulation over their entire operating range, produce the *finest in control*. Write for literature or call a Johnson engineer from a nearby branch office. JOHNSON SERVICE COMPANY, Milwaukee 2, Wisconsin. Direct Branch Offices in Principal Cities.

JOHNSON *Automatic Temperature and Air Conditioning* **CONTROL**

MANUFACTURE • APPLICATION • INSTALLATION • SINCE 1885

dyeing has proved very successful in many dyehouses:

Boil out the goods for 30 mins. at 200° F. with 1 to 2% penetrant and 2% soda ash.

Drain, refill, and circulate for 5 mins. at dyeing temperature with 0.5% Calgon and a retarding agent, if required.

Disperse the dye for 30 mins. at the dyeing temperature while the yarn is being prepared. Add the dispersed dye over a 20-min. period.

Dissolve and add the caustic over a 20-min. period.

Add hydrosulfite over a 10-min. period.

Circulate 20 mins.

Sample for shade.

Give a running wash inside-out without shifting until clear, then drain, refill, and circulate 15 mins. at 120° F. with 1 to 2% perborate.

Drain and refill. Soap off 15 mins. at 180 to 200° F. with 0.5 to 1% detergent and 1% soda ash.

Drain and rinse for 10 mins. at 120° F.

Drain, extract, and dry.

These Short-Cuts May Work

If no difficulties arise from the foregoing procedure, the following steps may be tried to cut time and costs:

1. Wet out at the dyeing temperature and dye in the same bath.
2. Cut the time used in making the additions of dye, caustic, and hydrosulfite, or add both the caustic and hydrosulfite together in solution.
3. Shorten the running wash cycle if the dye is not sensitive to excess alkali in the oxidizing or soaping baths.
4. Close off the drain valves, add the oxidizing agent, and then raise the temperature to 120° F. for the oxidation after the running wash.
5. Soap off in the oxidizing bath.

Always keep this question in mind when you experiment:

"Will I run into trouble by trying to save 15 to 20 mins. on a procedure that is working satisfactorily?"

Reduced-Dyeing Procedure

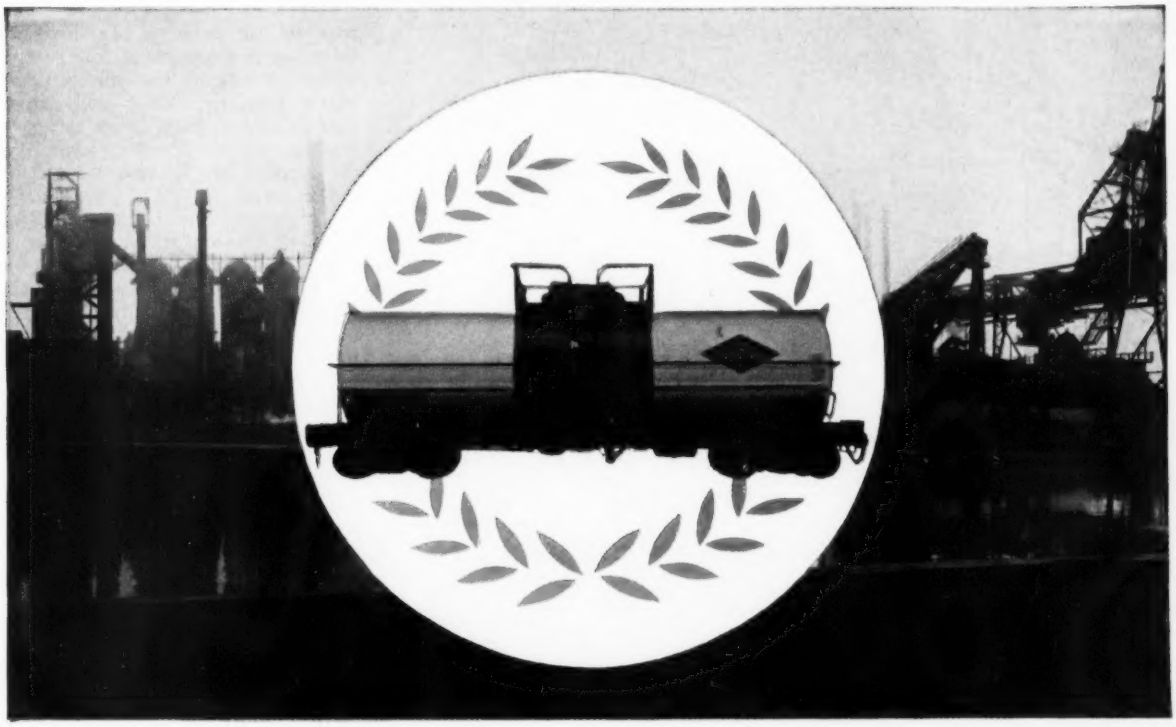
A reduced dyeing should have the same preparation of the yarn as for a pigment dyeing. The operation then continues as follows:

Fill with water, raise to the dyeing temperature and circulate for 5 mins. with 0.5% Calgon, 0.5 to 2% caustic, 0.5 to 2% hydrosulfite, and a retarding agent (if required).

While the yarn is being prepared,

DOW CAUSTIC SODA GIVES THE PROCESSING RESULTS YOU WANT

The uniform, high quality of DOW CAUSTIC SODA can be depended upon to greatly benefit your plant operation



Once your processing methods and materials are set, you have to be certain that the standards are maintained to assure the same efficient results every time.

If you use caustic soda, you can benefit your processing operations by ordering from Dow. Dow caustic soda is quality controlled through all stages of production so that you can always depend on consistency of product. The shipment you receive tomorrow, a month from tomorrow, a year from tomorrow will all be uniform, will all produce the same results you require.

This consistent high quality factor in Dow caustic soda is extremely important to the efficiency of your plant. And, it is the same regardless of what form you buy. Dow can meet your requirements for 71-73% solution, 48-50% solution, solid, flake and ground flake.

The next time you order caustic soda, order from Dow for dependability of product, dependability of service. Dow's famous distribution network will meet your needs wherever you are. Send for the DOW CAUSTIC SODA HANDBOOK, a valuable addition to your files. THE DOW CHEMICAL COMPANY, Midland, Michigan.

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disperse for 30 mins. at the reduction temperature: dye, Turkey Red Oil, and Calgon. Add the dissolved caustic to the dye dispersion and bring to correct reduction volume and temperature. Add dry hydrosulfite and reduce for the required time.

Add the reduced dyestuff in one or two portions; circulate 45 to 60 mins.

Sample for shade.

Give a cold running wash with the inside-out flow until clear. Oxidize and finish the same as a pigment dyeing.

Two-Sole Sock

(*Continued from page 139*)

step on the ordinary J.L. machine, there are two courses of sole to one course of design. The sole is made longer than the instep and causes trouble in boarding. With the two-sole attachment, however, courses in the outersole are the same number as in the instep.

To prevent the inner sole from "ruckling," a longer stitch length is made on the two-sole portion than on the instep half. The front-feed two-sole half is slackened from the half-round stitch-length control operated from the main shaft. A cam screwed to the top of the upper cylinder slackens the stitch as the short knitting-butt sliders pass the stitch cam.

These Advantages Are Claimed for the New Sock

This new principle of knitting hosiery was developed in Canada by Penmans Ltd. The two-sole sock, known by the tradename "2-Sole," is said to have these advantages—

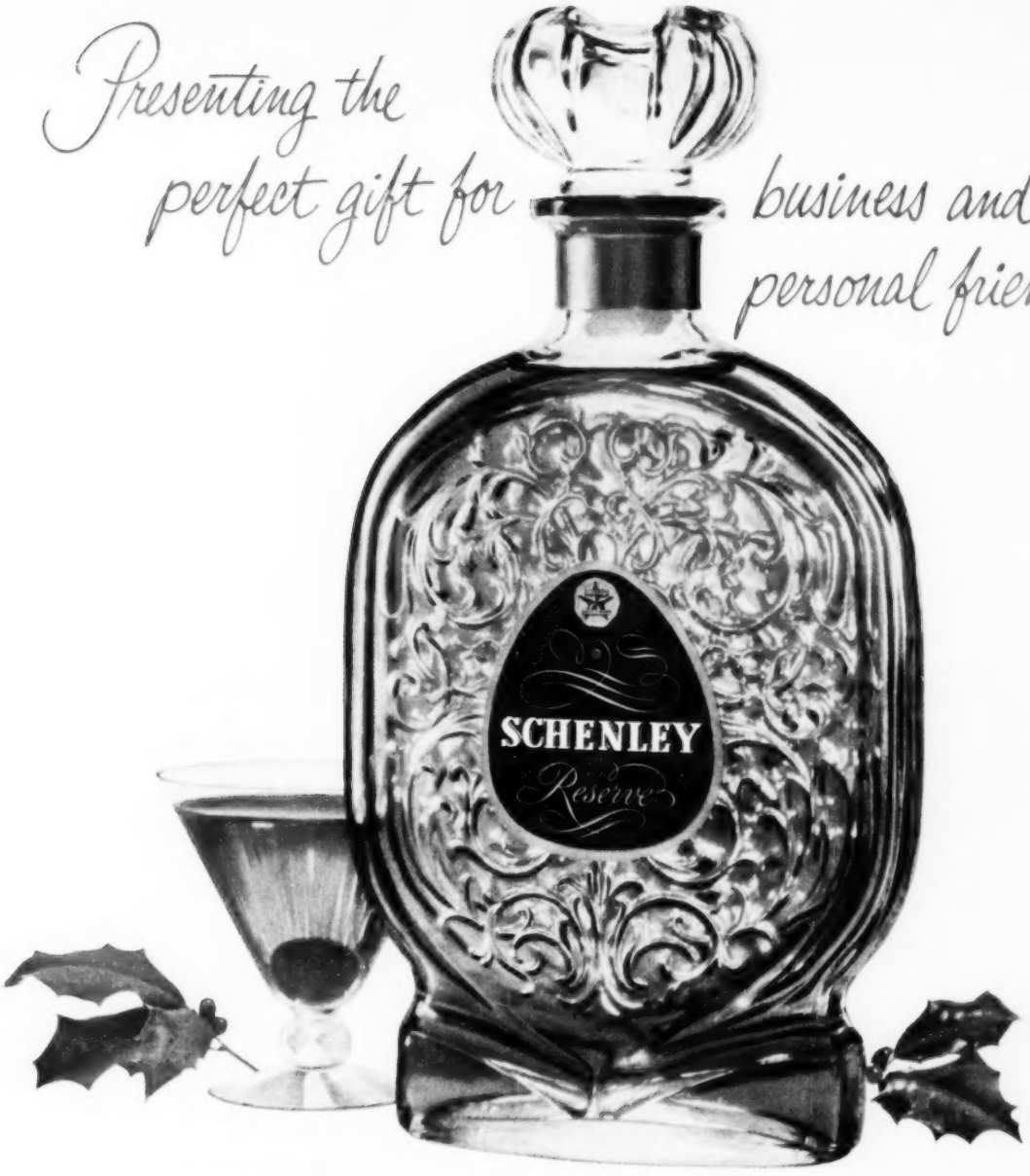
1. The two layers of fabric in the sole leave an air space between the outer layer and the inner layer and provide greater comfort for the wearer. People who spend a lot of time on their feet should benefit most by the two-sole construction.

2. A solid-color foot bottom can be made on jacquard numbers. Before the introduction of the two-sole sock, the sole of jacquard-pattern socks was knitted with alternate-course stripes of the colors used in the instep. A solid-color sole with a designed instep can now be made to equal the looks of more expensive socks.

3. A sock can be made with a white innersole and a dark outersole for men who are allergic to dyed fabrics under their feet. Undyed yarns used in the innersole must also be used in the instep design.

4. The two layers of fabric have their rough sides (the pebbly needle and sinker-loop side) turned toward

Presenting the perfect gift for business and personal friends



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...the best-tasting whiskey in ages
in a gleaming, crystal-bright decanter
at no additional cost

Handsomely gift-boxed for convenient giving

Hold the sleek decanter in your hands. Taste the subtle, satisfying flavor of the superb whiskey. You'll *know* it's the perfect holiday gift . . . one that will be enjoyed and talked about and remembered for years. Give Schenley, the gift that gives eloquent testimony to your own good taste!

The same fine whiskey is available, as always, in the distinctive Schenley round bottle.

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Still on Top!

with the many exclusive performance features that have made

ECLIPSE BOBBIN HOLDERS

THE FAVORITE!

The many exclusive features built into the Eclipse Bobbin Holder have made it the favorite of many leading textile organizations. They have found in actual operation that the Eclipse Bobbin Holder is outstanding in every way, and that the Eclipse reputation for basic quality and goodness is well deserved. If you are interested in modernizing your present plant equipment, you will surely want the finest—and the finest means Eclipse. Investigate today by writing or calling the Eclipse Machine Company direct.

These Features Mean Eclipse Superiority

1. Completely replaces wooden skewers.
2. Ball bearings minimize friction, resulting in uniform quality of roving.
3. Permits less twist. Tests indicate yarn of more even texture.
4. Creel boards easily cleaned. Overhead suspension leaves open creels. Blowers more effective.
5. Better spinning of spun rayon.
6. Easier creeling; less physical effort and fewer motions required.
7. Improved brake attachment prevents overrun and backlash.
8. Now cadmium plated and stainless steel balls more rust resistant.
9. Time-tested product—holders in operation for over ten years.
10. Easy to install; practically no upkeep.

Export Sales: Bendix International Division, 205 East 42nd St., N. Y. 17, N. Y.

ECLIPSE MACHINE DIVISION of Bendix AVIATION CORPORATION

ELMIRA, NEW YORK

each other. The foot contacts the smooth face side of the fabric, a condition opposite to the conventional sock. This advantage is greater for coarse-gauge numbers than it is for fine-gauge socks.

5. Nylon can be used as an outside sole fabric to improve wearing qualities, and cotton and wool yarns can be knitted for the inside sole for comfort.

6. More patterned area than sole area is visible because more needles are used to knit the instep than the outside or inside sole.

No Restrictions on Design

Southern Hosiery Mills finds that no restrictions are placed on design. It uses 15s soft-spun combed cotton yarn on both feeds on 144x4 machines. Most designs are made in 1x1 rib, but attractive designs have been made in 3x1 rib legs. Plans are under way to produce plain 6x3 ribs with two-sole construction in Dacron and Orlon.

A fixer takes two or three days to convert a J.L. machine to a two-sole machine. It is necessary to add a half-round stitch control to the top back-feed section, fit a dozen cams to the main drum, rearrange the sliders and jacks, and thin down the bottom transfer cam.

No special troubles have been encountered in knitting and fixing. It is hoped that when knitters become more conversant with the machine, one operator will be able to tend 12 machines.

Maintenance Program

(*Continued from page 118*)

each machine was placed on individual record cards.

The information shown on the cards consists of:

1. Equipment title
2. Name of the manufacturer of the equipment
3. Date of purchase and the order number
4. Serial number
5. Motor requirements
6. Starting equipment
7. Use of the equipment
8. Spare parts kept in stock
9. Lubrication schedule
10. Inspection schedule
11. Record of the machine's condition at the previous inspection
12. Repair order data at the completion of the inspection

A copy of the data on equipment in each department is placed on file in the department and also in the main-

✓ HYDRAULICALLY CONTROLLED POWER
✓ NO GEAR SHIFTING OR CLUTCHING DELAYS
✓ EFFORTLESS DRIVER CONTROL

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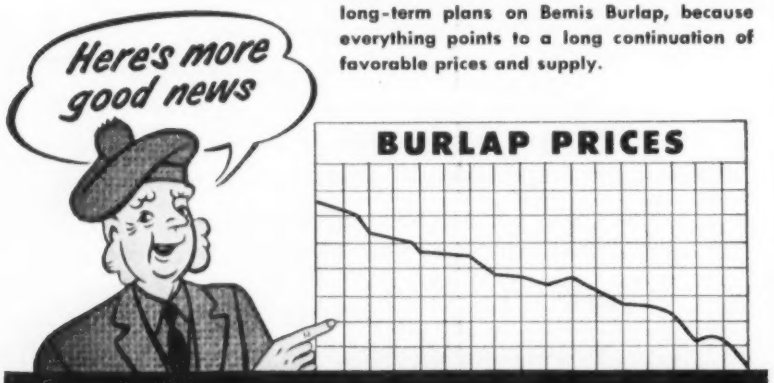
Whatever your needs, we can furnish mixed carloads of burlap piece goods in a wide assortment of widths and weights.

Prices are down! What's more, you can build long-term plans on Bemis Burlap, because everything points to a long continuation of favorable prices and supply.



Bemis

BEMIS BRO. BAG COMPANY

General Offices
St. Louis 2, Mo.

tenance department. At the completion of the survey, all needed information of a mechanical nature was on hand for future use.

During the survey, personnel of the operating departments were requested to supply data on the nature and cost of past repairs on the equipment, and to make suggestions on improvement of maintenance service.

A Yardstick Is Developed To Judge Employee Skill

The most difficult job in the survey was to judge the skill of individual employees of the maintenance department and determine each person's ability to do the work the inspection showed needed to be done.

General standards for Class-A craftsmen were developed as a yardstick for measuring the abilities of all maintenance employees. Class-A craftsmen are the best men in the craft who have had a minimum of six to eight years' training or experience.

A Class-A craftsman must—

1. Be able to work from any print or clear sketch, take his own field measurements, and make a readable sketch or diagram
2. Be able to work effectively from verbal instructions and draw on his own experience to determine correct procedures for economical execution of work
3. Be reliable, resourceful, conscientious, not easily rattled, and able to direct a limited number of men
4. Know and practice all plant safety and housekeeping rules
5. Know general plant procedures governing stores, work orders, permits, etc.
6. Be capable of planning his work in an orderly way and following it to completion with a minimum of instruction and supervision
7. Be capable of producing a satisfactory output on any type of work and still maintain quality workmanship
8. Be familiar with the plant standards governing his work
9. Be familiar with and know the names of all tools pertaining to his craft kept in the tool room
10. Be familiar with all plant areas and equipment where he has to work

Men, Supplies, and Tools Are Given Special Attention

Using these standards, we made a survey of all employees in the maintenance department. The survey showed that a considerable amount of training was needed to sharpen up the present force to do the work required immediately. We had no guarantee

For more information, write direct or use Reader Service post card.

Here's a High Purity "Alum" That's NEW and DIFFERENT

B&A Purified HEXAHYDRATE Aluminum Sulfate

$Al_2(SO_4)_3 \cdot 6H_2O$

For Special Uses Where High Assay and Low Water Content Are Desirable

BAKER & ADAMSON DEVELOPED this special new grade of Aluminum Sulfate in *hexahydrate form* to meet the exacting process requirements of a customer who needed "alum" of very low water content and extremely high assay.

This B&A fine chemical is a white, uniform, free-flowing powder of excellent solubility. It contains 22% Al_2O_3 and assays in excess of 93% $Al_2(SO_4)_3 \cdot 6H_2O$, offering a purity equivalent to U.S.P. quality on this higher assay basis. Its superior quality reflects General Chemical's long recognized leadership and experience as a producer of commercial and U.S.P. aluminum sulfate in many plants from coast to coast.

If yours is a special process where you can afford to pay more for raw materials to get higher quality and better performance, you will want to investigate this unusual material. For samples and further information, send coupon today. No obligation, of course.

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REAGENTS

BAKER & ADAMSON

Fine Chemicals

GENERAL CHEMICAL DIVISION
Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

Clip this coupon to your company letterhead and mail today!

GENERAL CHEMICAL DIVISION, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6, N. Y.

Please send me further information on B&A Purified Hexahydrate Aluminum Sulfate.

I would like to receive ☐ Data Sheet ☐ Sample

I am interested in examining this material for the following use:_____

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Name_____

Company_____

Address_____ TW-10

at their Saco Mill

The York Division, Bates Manufacturing Company, installed its first four Stanley Magic Doors in August, 1947. It didn't take them long to discover that: **Magic Doors start saving money for their users the day they start to work, pay for themselves within months.**
Here is why Bates decided to multiply these savings by equipping ten more plant doors with Stanley Magic Door Controls.

- **Magic Doors speed mill traffic. They increase operating efficiency, lower operating costs. With Magic Doors no one has to stop productive work to tug and pull at heavy plant doors.**
- **Draft conditions that plague many mills are greatly diminished.**
- **Stanley Magic Doors help keep conditioned air, temperature and humidity at constant levels. Stanley Magic Door Controls open plant doors, hold them open while traffic passes through, *then* close doors quietly, securely.**

Magic Doors are saving many textile users thousands of dollars each month. Existing doors are readily equipped. If your present doors slide, swing or fold — let the Stanley Magic Door representative show you how you can open a Magic Door "savings account" at once. Send for full information today.

STANLEY
Magic Door
CONTROLS

Representatives in Principal Cities

THE STANLEY WORKS, Magic Door Division
31310 Lake St., New Britain, Conn.

Gentlemen:
Without obligation, please furnish full information on Stanley Magic Door Controls.

COMPANY NAME _____
MY NAME _____
ADDRESS _____
CITY _____ **ZONE** _____ **STATE** _____

STANLEY TOOLS • STANLEY HARDWARE • STANLEY ELECTRIC TOOLS • STANLEY STEEL STRAPPING • STANLEY STEEL

that our employees would be able to do work required in the future.

An on-the-job training program was developed, based on the Class-A standards, and is in operation in the plant.

Since even the most highly skilled mechanic cannot be efficient if he does not have an adequate supply of spare parts for equipment at hand at all times, the survey extended into the stores department.

Stores were rearranged, and inadequate supplies of certain stores were replenished to avoid lengthy and costly shutdowns of equipment. Investments in other stores were too high because bins were overloaded. These stores were reduced through normal usage and were not reordered as heavily as before.

In cooperation with the survey committee, the maintenance foremen checked the work to be done to see that employees were equipped with necessary tools to do the work at the least cost.

Studies were made to eliminate unnecessary delays, provide adequate supervision, and develop better methods for handling future jobs.

Studies were also made of the travel time between the shop and jobs in the plant. Waste time was reduced on many jobs by furnishing transportation for the men and materials and by having materials at the job site.

A Program Administrator Is Placed in Control

Before the survey was completed, many steps had already been taken to correct load practices in the maintenance program. When the survey was completed, action or decisions by management men had to be taken because many of the recommendations of the committee were so broad and sweeping in concept.

In the organizational changes, two maintenance-department foremen who handled maintenance problems on an hour-to-hour basis were eliminated. They were replaced by a program administrator, a scheduling and expediting clerk, and a clerk-typist.

The administrator does this work:

1. Develops and establishes procedures
2. Coordinates and follows up maintenance cost control
3. Works with maintenance and operating foremen to establish inspection and lubrication schedules
4. Directs the distribution of "tickler sheets" (reminders to department foremen and the maintenance department that inspections, major repairs, and other work must be done) and checks on their return
5. Works with department fore-

the right PERSPECTIVE on bobbin equipment PAYS OFF

Take a cost-wise perspective on your mill operations and you'll find that your best buy in bobbins is U S equipment.

Whether it is in the spinning room shown here, or any other stage of fiber processing, you'll find the extra durability and quality that U S builds into bobbins, wooden tubes, spools, cones, and rolls save you money.

Remember, your *total investment* in yarn carriers runs up to a large expenditure — as much or more than you pay for most units of processing machinery. To get the most for that investment, you can rely on the 94-year experience and unequaled design and production facilities of U S.

Talk to a U S sales representative first. You'll find *it pays.*

Manufacturing Plants
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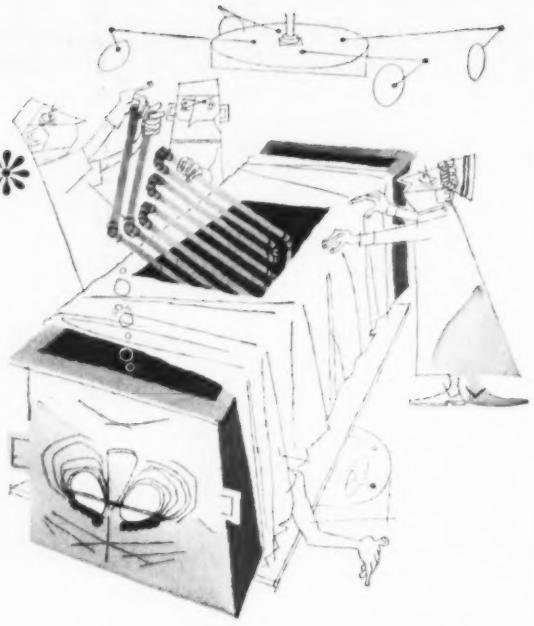
has **coil-itis** ✻ got you constantly doctoring your tanks?



Like the human appendix, pipe coils often give constant trouble until they are removed and replaced with Platecoils. Immediately, you will notice the difference as Platecoils put new life and profits into your heat transfer processes. They heat or cool 50% faster. They take 50% less space in the tank leaving room for greater payload. Platecoils overcome the limitations and operating difficulties of old fashioned and outmoded pipe coils to save hours of downtime.

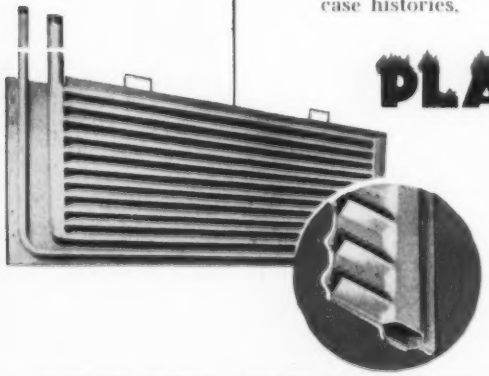
It costs less to cure coil-itis with Platecoils than to suffer its evils.

Write for Bulletin P32 today!

PLATECOILS SAVE 50% IN HEAT TRANSFER COSTS

PLATECOILS REQUIRE 90% LESS CLEANING

At Motor Wheel Corporation cleaning time has been cut from 10 hours per pipe coil every 60 days to only one hour per Platecoil. Ask about other case histories.



PLATECOIL

REPLACES PIPE COILS

✻

Coil-itis — Diagnosed as tank heating and cooling problems. **Platecoils** — the prescription for solving pipe coil problems.

PLATECOIL DIVISION, TRANTER MANUFACTURING, inc., LANSING 4, MICHIGAN

For more information, write direct or use Reader Service post card.

men in selecting spare parts to be stored

6. Checks the effectiveness of the maintenance program and recommends needed changes in procedure

7. Supervises procedures in the maintenance department relative to the program

Two Clerks With Specialized Duties Help the Administrator

The scheduling and expediting clerk does this work:

1. Informs the master mechanic and department foremen of work developments involving both departments

2. Transfers requests for routine work directly to the foremen

3. Sorts repair orders by crafts and assists in routing orders and estimating the job cost of each order

4. Checks and maintains proper repair-order charges

5. Assists in the formation of maintenance-department weekly schedules

The clerk-typist works closely with the program administrator and does this work:

1. Collects repair costs from repair orders

2. Types and maintains equipment-inspection and maintenance-service records

3. Maintains repair-order charge accounts

4. Performs miscellaneous typing and clerical work in conjunction with the tabulation of work backlogs, records of maintenance, and planning and cost analysis

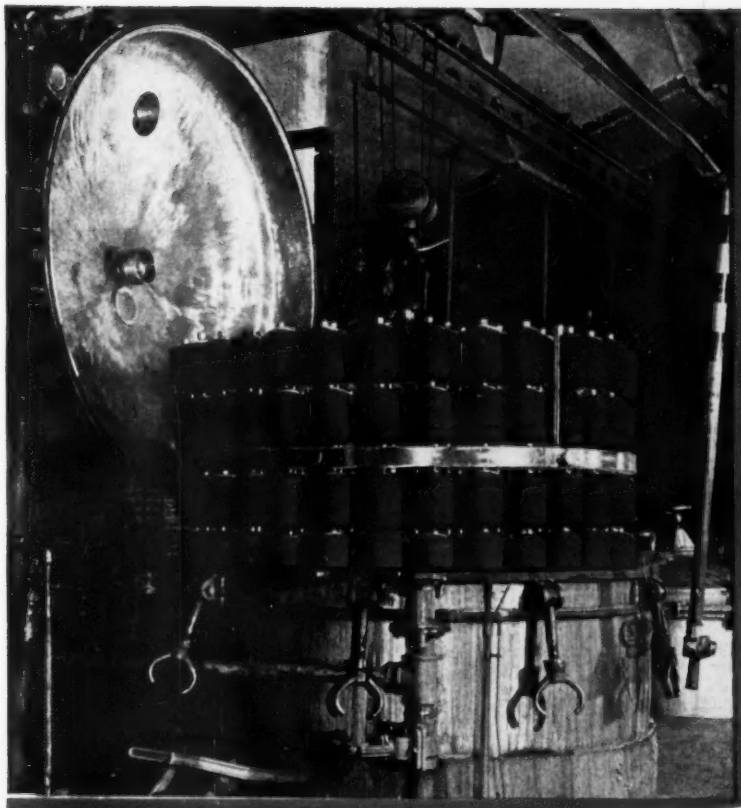
Emergencies Are Reduced By Inspection and Schedules

With the installation of the new program under the administrator, inspection service and scheduled work have replaced the old system where equipment breakdowns were common.

Inspections are regularly made by Class-A craftsmen from the maintenance department who ordinarily repair the type of equipment involved. The craftsmen use checklists when they make inspections. They give a copy of the completed checklist, showing the condition of the equipment and the recommended repairs, to the foreman of the operating department and the foreman of the maintenance department.

All maintenance work, other than emergencies, is planned from the data shown on the inspection checklists.

The scheduling of work is made by the craft foreman involved and a member of the master mechanic's staff. To schedule jobs, the craft foremen estimate the manhours required



PACKAGE-DYED YARNS give better efficiency at the knitting machine when they're lubricated uniformly with Avisco Chemicals. Because of their extremely small particle size, Avisco lubricants penetrate through the entire package . . . assure excellent uniformity of treatment at the outside, center and inside of the package. These readily-emulsified waxes dry on the yarn . . . do not wick out, migrate or suffer loss by volatilization. They are easily added in the last rinse after dyeing, or directly in the dye bath.

Better lubrication for better knitting...

with AVISCO textile chemicals

The surface condition of your yarn makes a big difference in both the quality and efficiency of knitting. For the best possible surface treatment, it pays to choose Avisco textile chemicals. They do a superior job for your yarn, because they lubricate, soften and prevent static all in one application. These 100% active materials have excellent stability . . . never wick out, turn rancid or discolor in storage.

Whatever fiber you're processing . . . natural or man-made . . . you'll find the surface treatment you need in the varied line of Avisco chemicals. Avisco specialists will help you choose the right materials and techniques for your own mill's problems. Write to Textile Chemicals Division, P. O. Box 455, Marcus Hook, Pa.; or Textile Chemicals Sales, 1617 Pennsylvania Blvd., Philadelphia, Pa.

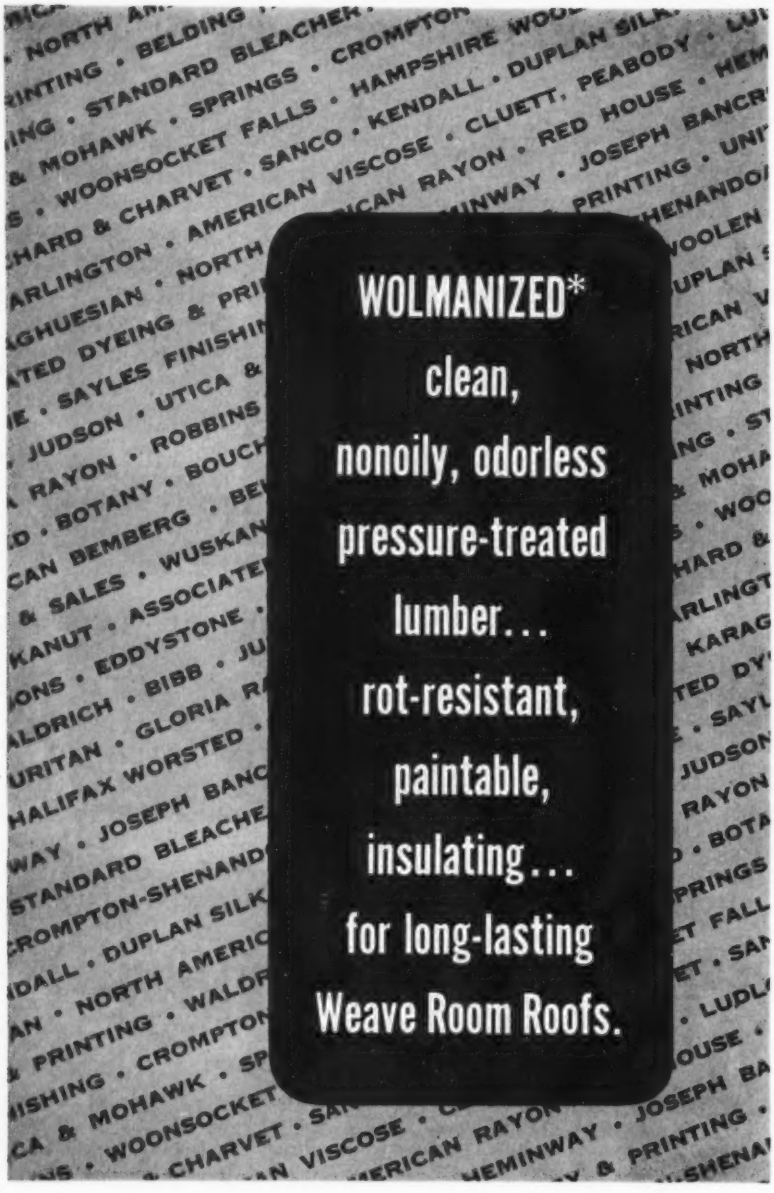
Send for your copy of this new booklet— "Avisco Textile Chemicals"

Avisco textile chemicals were developed in cooperation with and are manufactured by the Atlas Powder Company, Wilmington, Delaware

Avisco

AMERICAN VISCOSE CORPORATION

America's first producer of man-made fibers



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PRESSURE TREATED
Lumber

to do the work from past repairs to the same equipment.

Schedules are made on a week-to week basis.

When emergencies occur, men working on jobs of secondary importance, from a time standpoint, are removed from the scheduled work to repair the breakdown. Work interrupted by breakdowns is rescheduled for repairs the following week. With this method, every hour of every man's time is scheduled a week in advance.

Management Men Step In To Check With Maintenance Men

In scheduling work, close communication between management men and maintenance men is required. The following important points must be kept in mind:

1. Maintenance work must be done when equipment downtime will have the least effect on production.

2. Departments not directly concerned with actual work, but affected by it, must be notified in advance.

3. Major job schedules must be kept within the time estimate, and management men must be advised if unforeseen difficulties intervene.

4. The time required to maintain production equipment must meet production-time needs without being excessive.

5. Spare parts and tools must be given advance attention so that stopped equipment can be restarted quickly.

Records of the cost of maintaining each major item of equipment are kept. The cost records are taken from the information on repair orders. Excessive costs on any piece of equipment can be checked and the source of trouble eliminated. Repair orders are so complete and explicit that it is easy to obtain all information from them necessary for cost records.

Now that the program is in complete operation, more data is becoming available to enable management men to better control maintenance procedures and costs.

Running Nylon Blends

(*Continued from page 135*)

Nylon staple has a tendency to load up the card clothing, but this tendency can be overcome if you follow these rules:

1. The wire on the metallic breast should have teeth that are fairly straight and not so sharply angled that they will load up or break the fibers.

2. The stock should be thoroughly

THIS SUPER Seal

(EXCLUSIVE IN SEALMASTER BEARINGS)

obsoletes old ideas on bearing maintenance costs

IT KEEPS dirt out AND grease in!

When dirt gets into bearings or grease leaks out, you've got trouble . . . high maintenance and replacement costs and all-too-frequent disassembly and downtime for machines.

Permanently Sealed SEALMASTER Bearings Were Developed to Lick This Problem

HERE'S WHY: In SEALMASTER Bearings, grooved, steel inner seals—permanently mounted on the outer race ring, one on each side, form the grease chamber.

Two annular felt-lined flingers rotating with the inner race ring and within the grooves of the inner seals, form the outer seals. The centrifugal action of these flingers effectively seals out all dirt. The bottom flanges of these rotating flingers, passing under and slightly beyond the inner seals, create a vortex action in the grease chamber. This breaks up the grease flow and retains just the right amount of grease to lubricate.

Whether your problem is dirt or simply making sure the bearings in the machines you make or use will give maximum service, SEALMASTER Bearings can help *you*. They are first class assurance of low maintenance costs and long bearing life! Write for Bulletin No. 845.

SEALMASTER

BALL BEARING UNITS

Cartridge Unit | Flange-Cartridge Unit | Flange Unit | Take-Up Unit | Pillow-Block Unit

SEALMASTER BEARINGS

10 Ridgeway Avenue, Aurora, Illinois

A DIVISION OF STEPHENS-ADAMSON MFG. COMPANY

FACTORY REPRESENTATIVES AND DEALERS IN ALL PRINCIPAL CITIES

For more information, write direct or use Reader Service post card.

Another new development using

B. F. Goodrich Chemical ***raw materials***

B. F. Goodrich Chemical Company does not make this denim. We supply the Hycar latex only.

Corralled-upgrading idea for denim!

IF you think denim is just good old denim, you're going to whoop it up for denim treated with Hycar latex. A manufacturer was shown how to upgrade his product with Hycar. The result? A revolution in denim!

Not only does *Hycar*-sized denim wear much longer because of improved abrasion resistance, but it actually has a better hand that will not change even after many washings. Pastel shades are now available because Hycar sizes the warp yarns, retaining the color permanently. You can even have the old standard blue denim trimmed with white—color-fast too!

Now denim has gone beyond work clothes into a new market for sports garments, and sales have doubled and trebled. Hycar has a way of giving products a sales lift!

Hycar rubber in its many forms not only resists abrasion, but also heat and cold, oil, gas, aging and many chemicals. And there's a wide variety of Hycar compounds with uses in many industries, from petroleum and printing to paper and textiles.

Perhaps a Hycar rubber compound is just what you need to improve or develop a product—to open new sales fields. We'll help with technical advice. Just write Dept. TN-4, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

B. F. Goodrich Chemical Company
A Division of The B. F. Goodrich Company

Hycar
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American Rubber

GEON polyvinyl materials • HYCAR American rubber • GOOD-RITE chemicals and plasticizers • HARMON colors

opened in the mixing picker; this work cannot be left to the metallic breast when synthetics form a major part of the mix.

3. The wire on the card cylinders should be somewhat finer for nylon staple than for wool of equivalent fiber diameter. The wire must be in perfect condition. Wire that is not perfectly ground is not suitable.

4. Low card speeds and a static-resistant finish on the nylon staple will also go a long way to prevent loading.

5. The fancy rolls must be set close to prevent the cylinder from loading.

6. Static is sometimes troublesome at the apron condenser because of the rubbing action of the belts. A static-eliminator bar at this point will help.

7. Temperature should be at least 70° F., and relative humidity should not be lower than 55%.

8. Roping tension in jack-spool winding must be minimized to prevent trouble from the relaxation that is characteristic of nylon.

Spinning

Nylon staple and nylon-wool mixtures have been spun successfully on both mules and ring spinning frames.

Ring frames and modern mules produce large packages that are often not rewound before warping. Since the yarn may remain on the spinning package for some time before further processing, tension should be minimized.

Mock-twist or other yarn spun from double roping can be produced by setting up a double row of spools and running two ends of roping for each end of yarn. If only one roping contains nylon staple, the let-off-roll tension must be light; otherwise the roping that contains the nylon may pull together and form a spiral effect in the yarn.

For core yarn, one nylon cone is set up in a rack behind the spool stands for each end of roping. In calculating the yarn number, remember that the roping is drafted but the core yarn is not. In fact, the core yarn contracts a little because of the twist.

Twisting

Regular ply yarn can be made on the mule, but it is better to use a twister. If a fancy twister is used and only one end contains nylon, provision should be made to let off the nylon a little faster to counteract any tendency of the nylon to contract. Experi-

What a Hit!

BOGER & CRAWFORD
SPUN NYLON YARN!

You never miss—when you specify Boger & Crawford spun nylon yarn 60/2 and 80/2 ply!

Scores *perfectly* whether you use it for weaving or knitting sweaters . . . skirts . . . stockings!

Available in 20 wonderful fast colors . . . with color fastness equal to or better than Synthetic Fiber Test #1 and #2 AATCC.

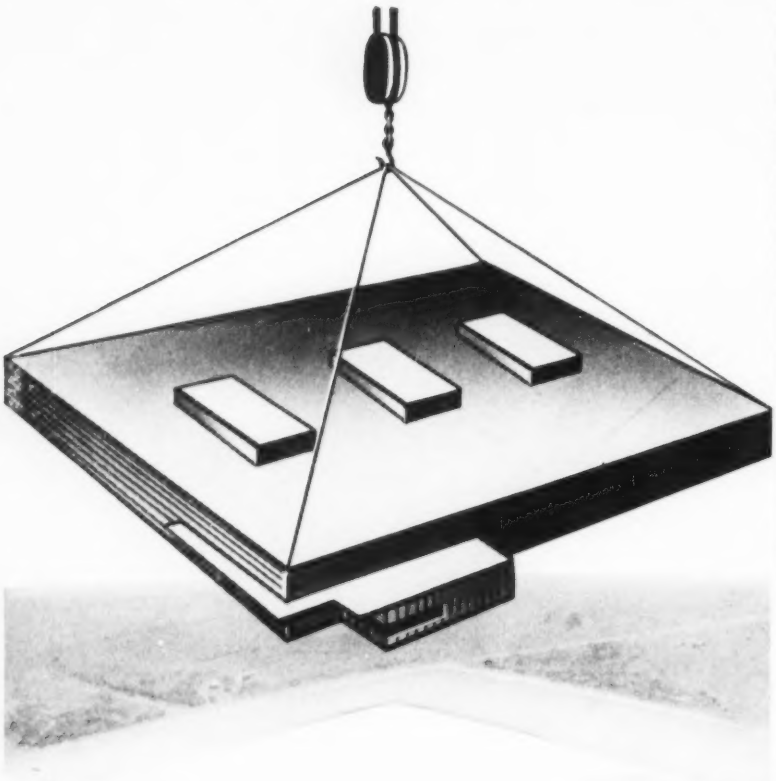
FREE SAMPLES sent promptly. Write today

The Quality of Boger & Crawford yarn is guaranteed —the highest tribute we can pay it!

SIGNED Frederick Boger

BOGER & CRAWFORD

K & E. Venango Sts. • Philadelphia 34, Pa.



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THE KULJIAN CORPORATION OFFERS THESE SERVICES FOR THE TEXTILE INDUSTRY THROUGHOUT THE WORLD

○ **ENGINEERING**
Preliminary studies and layouts followed by complete detailed working drawings and specifications; the services of a resident engineer during construction are optional.

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Management of the over-all project including coordination of all subcontractors and all directly employed field forces; accounting and purchasing services are optional.

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Both of the above services on a single contract with unified responsibility for the project from preliminary studies to completed construction.

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mentation will soon give the best tension settings.

Once such a setting has been established, it should be written down to save unnecessary loss of time when similar yarns are run again.

Maintenance Practice

(*Continued from* page 121)

men were required on each shift to service them.

Now, all the compressors are positioned in one room adjacent to the boiler room and are easily serviced by one man on each shift. Two more compressors (high-pressure type) being added, and the four now in service, will be serviced by one man on each shift. In addition, the boilers are maintained by the same men.

The four compressors now in use are each double units of these sizes:

No. 1 931 (cu. ft. per min.)
No. 2 1,282
No. 3 1,464
No. 4 1,852

The two compressors being added are double units also, of these sizes:

No. 1 1,800 (cu. ft. per min.)
No. 2 1,400

Three 100-lb.-pressure outside tanks, 4 ft. in diameter and 12 ft. high, store the compressed air. Two other tanks are being added to take care of the two new compressors.

Since the mill is operating six days a week at present, the compressors are cleaned and serviced on the week end. The valves are cleaned, and adjustments are made on the bearings, etc. as part of the maintenance. Oil is changed every 10 weeks.

A Compressor Will Soon Be Rebuilt Every Three Months

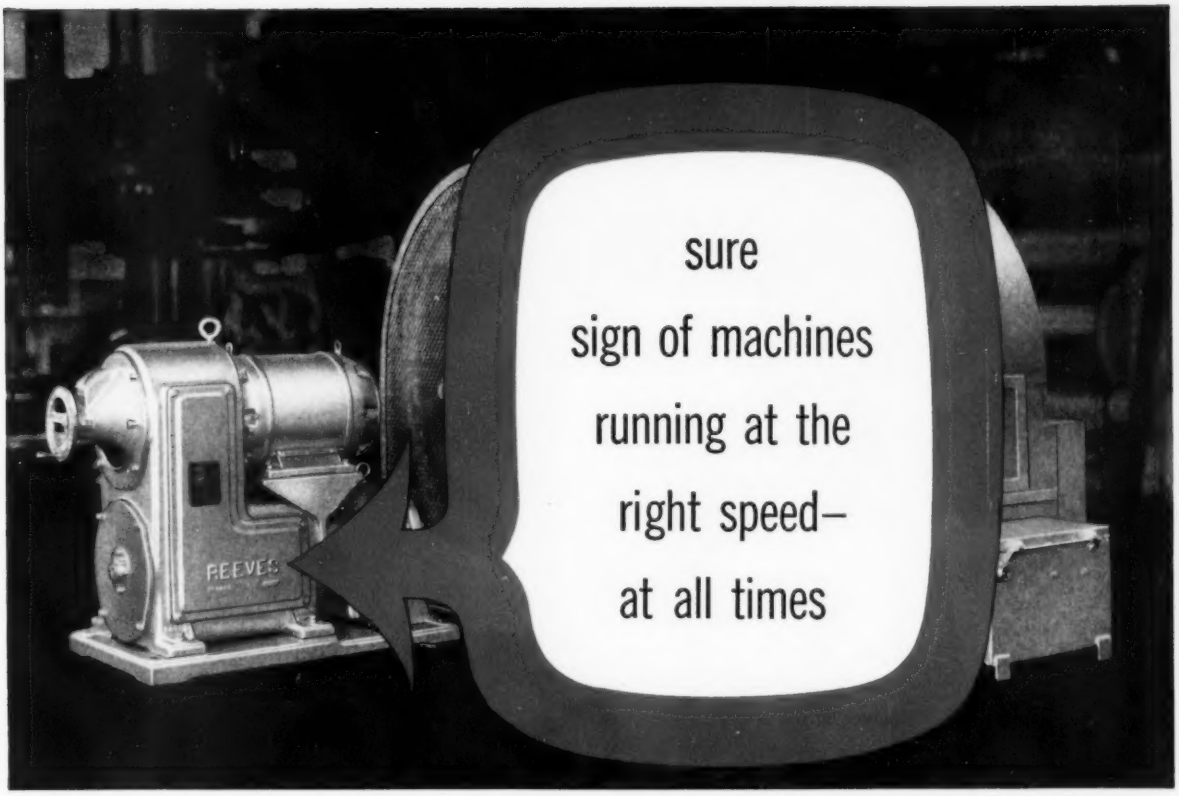
When the two new units are placed in service, one compressor will be torn down during production hours and overhauled every three months.

The proposed maintenance schedule will include this work:

1. The heads will be removed.
2. The pistons, rings, and rods will be taken out.
3. Main bearings will be checked for wear.
4. The parts will be adjusted throughout the compressor.

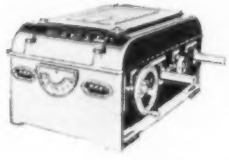
Two boilers equipped with 325-hp. motors can be fired by either natural gas or fuel oil. Surplus natural gas is used throughout the summer months and during the winter season when available.

Surplus natural gas is cheaper than coal and is used while the supply lasts. When domestic uses eliminate the surplus gas, the gas company noti-



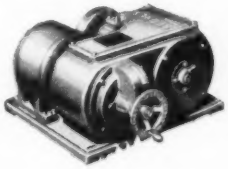
Reeves Variable Speed Drives

Reeves makes America's only complete line of variable speed drives —not 1, but 3 types to choose from



VARIABLE SPEED TRANSMISSION: Provides stepless speed adjustability over a wide range—as high as 16 to 1; sizes to 87 hp. Vertical or horizontal designs—open or enclosed.

VARI-SPEED MOTOR PULLEY: Converts any standard, constant-speed motor to a variable speed drive. Speed variations up to 4 to 1. Sizes to 10 hp.



VARI-SPEED MOTODRIVE®: A complete variable speed power plant. Combines any standard, constant-speed motor, REEVES speed-changing mechanism and gear reducer in one, compact unit. Sizes to 25 hp; speed ratios as great as 10 to 1.

Machines equipped with REEVES Variable Speed Drives . . . have a wider work range, handle more different shapes, sizes, and materials . . . because REEVES *always* provides the accurate, infinitely variable speed adjustability that is the key to efficient production.

With the turn of a handwheel, touch of a button, or automatically—*without stopping the machine*—you can change the speed to meet the need of every operation, every operator, and every operating condition. The result is higher rate of production and improved, uniform quality—at lower cost.

For machines now in service and the new ones you plan to buy, standardize on REEVES. Proved in 300,000 successful installations . . . available to you in a wider range of designs, sizes, speed ratios, and controls than any other make of variable speed drives. Send for free catalog, No. W81a-G.

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Recognized leader in the specialized field of variable speed control

accurate · variable
REEVES *Speed Control*

JENKINS METLKOR® BRUSHES
FOR
WOOLENS
AND
WORSTEDS

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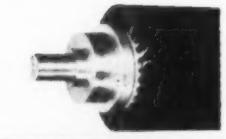

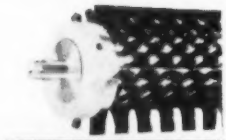

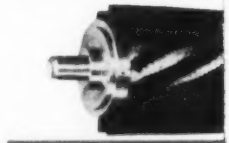

One of the most important factors in achieving top quality and peak performance in the manufacture of woolens and worsteds is the use of the right brush, correctly designed and constructed. The Jenkins' METLKOR brush for the woolen industry is just such a brush, developed out of three-quarters of a century of experience.

Specifically designed for processing these fabrics, the Jenkins' METLKOR brush will not sag, split, crack or get out of alignment. True-balanced and uniformly tufted to give uniform production, this brush—with any desired bristle on permanent metal core—will outlast other brushes many times while surpassing them in efficiency.

Leading textile machinery manufacturers for years have been using efficient Jenkins' METLKOR BRUSHES as an integral part of their equipment.

If you have any standard or special brush problems, write, wire or phone today, without obligation.

LIFEWOOD® *for wood core brushes and lags.*

OTHER METLKOR BRUSHES FOR WOOLENS:

- BRUSHING MACHINE
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Over Three-Quarters Century of Pioneering Brushes for Industry.

Cedar Grove, Essex County, New Jersey

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fies the maintenance department, and the boilers are switched to the fuel-oil supply.

The boilers are equipped with two sets of automatic controls, one set for the gas and another for the oil.

An electronic control panel is added to the automatic controls on the gas-fired system to free the foreman from any duties and also to insure safety.

Other equipment located near the boilers and under the care of the compressor and boiler foreman is a steam turbine for fire protection during power failures. A 175-hp. diesel generator furnishes power for all instruments, for pilot lights throughout the mill, and for boiler operation during power shutdowns.

Working Foremen Direct Work in Other Departments

Air-conditioning equipment and humidifiers are cleaned and serviced under the supervision of another working foreman.

The sheet-metal shop foreman works closely with the air-conditioning foreman to make water boxes for humidifiers, repair and make new air-conditioning ducts, etc.

Other work done in the sheet-metal shop includes repairs to spinning-frame cylinders, cards, and pickers, and all sheet-metal work that is required by other production departments.

The plumbing and heating foreman has all piping work in the mill under his supervision. He and his employees do all piping work except installing sprinkler systems, which is done by outside contractors.

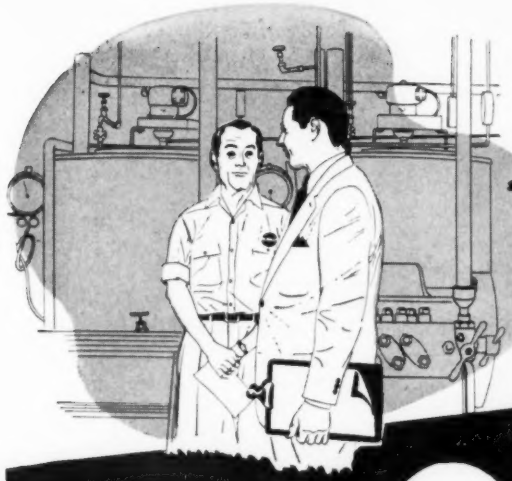
The yard or labor foreman supervises yard work and shipping.

The head carpenter operates his department on only one shift. The carpenter shop is equipped with the latest type of machinery to do any job necessary in the maintenance of the production machinery and buildings.

Among the jobs of production machinery and parts repairs are repairs to warper section beams, loom beams, etc.

Machinery improvements that require woodwork are first worked out in the carpenter shop. When the correct size and shape of a new object has been determined, large quantities are bought from wood-parts manufacturers.

All building repairs, including walls, floors, and roofs, are made by the carpenters. When a building has to be completely reroofed, the job is given to an outside contractor. As an experiment, the carpenters recently



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3-1

Completely Solves Your Constant Tension Winding Problem

NOW YOU CAN BE CERTAIN of constant tension from start to finish in winding textile materials — you can handle the most delicate fibers and synthetics without danger of stretching, breaking or bulging. Here in the new, revolutionary Hobbs "Alquist" Winder is your opportunity to step-up production and obtain a higher quality of wound material than has ever been possible before.

NO OTHER WINDING DEVICE can match the "Alquist" for simplicity, efficiency and flexibility. This compact unit consists of a special electric motor, flange mounted to a grear reducer. It is entirely independent of the main machine drive. Only a hook-up to your present power outlet is required. Control is electrical. The desired tension is maintained at all times simply by setting a knob at the start of the winding operation. As the diameter of the roll increases, the motor of the winder slows down in direct proportion to compensate for the increased torque required. It is *constantly and automatically* sensitive to the material being wound. Not only does it save your materials, but the "Alquist" Winder cuts down your operating costs. Actual power utilization is as high as 80% — approximately four times greater than other types of winders.

OUTSTANDING PERFORMANCE HAS BEEN PROVED in European textile mills. Introduced recently in America by Hobbs, the "Alquist" Winder is available for left or right hand winding and in a range of models to handle materials of any weight. Cost is competitive.

FIND OUT FOR YOURSELF just why the Hobbs "Alquist" Winder can make such a big difference in the quality and quantity of your production. Mail coupon today for free bulletin giving complete information. No obligation.

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Please send complete information on the new Hobbs "Alquist" Winder.

Name ..... Title .....
Company .....
Type of material wound .....
Street .....
City ..... Zone ..... State .....

reroofed a building (5,000 sq. ft.) with pitch over aluminum foil.

A program to maintain floors with the Tennant system is being started under the supervision of the head carpenter.

The two plant painters work for the plant engineer. Under normal conditions, the painters are able to repaint the entire plant every five years. Now, however, as a result of plant expansion, outside contractors are aiding in repainting the plant.

Operating Cost Is 2% Of Plant-Operating Cost

New employees are trained by the head of each maintenance operating department. The employees are started in as regular hour hands and are promoted to carpenters, machinists, etc. as they develop the ability to do the work and as openings occur.

Since a clerk is not employed in the maintenance department, no orders are written by production departments for work to be done.

For example, if a loom motor fails, the loomfixer on the section comes to the electric shop and tells the electrician on duty the nature of his trouble and gives him the loom number. If the electrician is working in another part of the mill, the loomfixer writes the loom number on a blackboard, and the electrician goes to the loom as soon as he returns to the shop.

Main-drive troubles and other mechanical troubles are reported to the machine shop by the same method.

All supplies needed for maintenance work (except electrical supplies) are kept in the main-plant supply room, and records of the supply costs for maintenance are kept by the supply department and sent to the accounting department for tabulation.

Electrical supplies are locked in a fenced area in the electric shop. They're charged to production departments as they are used.

Records of employees' time are kept by each maintenance-department head. A record of overtime is kept, too.

A budget is not kept as a strict controller, but costs of operating the maintenance department are kept. The total operating cost of the maintenance department is less than 2% of the total operating cost of the mill.

The Maintenance Department Helps With a New Building

A new three-story building is now being completed to house additional warp-processing machinery bought to furnish yarns for 500 new looms.

The maintenance department has

For more information, write direct or use Reader Service post card.

FORTISAN*

The super-strong rayon fiber

Now in production for civilian needs

Since 1940, virtually all production of Celanese* Fortisan has been claimed for priority army applications. It is now available in practical quantities for civilian markets.

FORTISAN combines outstanding strength with dimensional stability unequalled in any organic fiber. Its war service includes a wide range of fiber uses from cargo chute fabrics to tiny core threads in radio and radar sets . . . from combat garment linings to airship envelope fabrics.

FORTISAN yarns and fabrics feature beauty of hand and appearance with high strength and stretch resistance . . . it does not melt and is not thermoplastic. FORTISAN is a 100% cellulose fiber and is attractive to producers of fine cotton goods in that when used in combination with cotton it may be subjected to all cotton finishing techniques, such as dyeing, printing, mercerizing, bleaching, fire retarding and coating processes.

A wide variety of filling threads may be used with FORTISAN for an almost unlimited range of fabric effects. Textile manufacturers are invited to work closely with Celanese representatives in determining best possible uses of FORTISAN for their purposes.

*Reg. U.S. Pat. Off.

Celanese

CORPORATION OF AMERICA, NEW YORK 16

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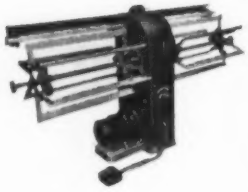
FRAMLEIDSLA OG GRÓDI
PRODUCTION ET PROFIT
PRODUKTION OCH PROFIT
生產與利益



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'Round the globe—from New York to Iceland to South Africa to China—users have found that Fidelity Skein Reelers mean increased production and profit. Manufacturers throughout the U. S. and in 25 foreign countries have installed Fidelities, because they are easier to use and more profitable to operate.

In any language, Fidelity Skein Reelers prove that they are their own best salesmen. Why not let them prove their ability to you, too? Write today for illustrated brochure, "The Fidelity Skein Reeler." (SR104)

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installed all lighting, motors, and wiring inside the building. Wiring conduits to the inside of the building were installed by a contractor.

Nine slashers were moved from an old section of the mill to the new building by the maintenance department without interfering with production.

Overhead beam-handling equipment for the entire new slasher room was installed by maintenance men.

Warp-winding equipment was moved and set up by a group of men, who specialize in this type of work, from another mill in the Lowenstein chain of mills.

Carding and spinning machinery was moved and placed in operation by an outside contractor.

In addition to maintaining the entire building and equipment with little outside help, the Huntsville maintenance department is able to furnish many of the services necessary in building a new section to the mill and in placing the machinery in operation.

Clean Process Water

(Continued from page 123)

fied and softened water. The caustic is introduced in the line between the softening tanks and the baffled mixing tank.

A red alarm signal on the panel board attracts the operator's attention to an unsatisfactory pH of the clarified water in the clear well.

Here's Why the System Was Needed

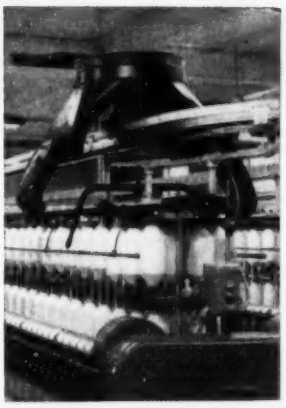
The Bridgeport mill consumes a million gallons of Schuylkill river water each day, half of which must be treated before it can be used as process water. The turbidity of the raw river water varies from 10 ppm. to 950 ppm. and changes in the matter of a few hours. It is not uncommon for the turbidity to increase overnight from 155 ppm. to 950 ppm. or from 12 ppm. to 650 ppm. Process water, for best results in the mill, cannot have a turbidity greater than 8 ppm. and must have a pH of 8.

Formerly, treatment consisted of the manual dumping of alum into the raw water, which flowed through a mixing trough and a series of settling tanks with underflow and overflow baffles. The settled effluent was pumped through sand filters and sodium zeolite softening beds and then to storage tanks. Since the process water had to have a pH of 8, the alum had to be added in limited amounts and advantage could not be taken of

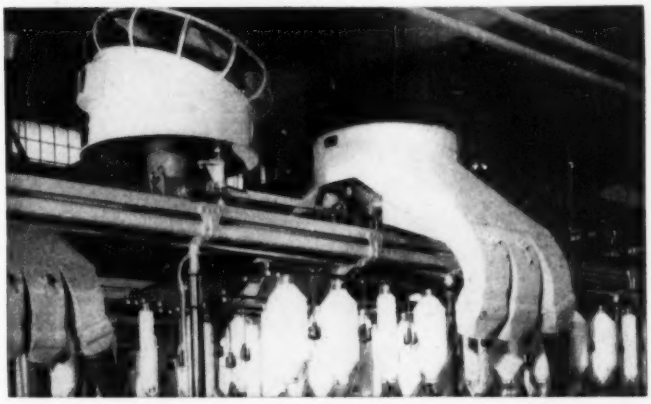
For more information, write direct or use Reader Service post card.

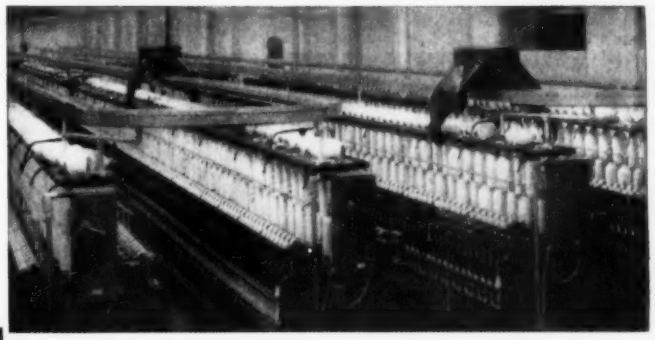
Reduce Costs and Improve Product with Parks-Cramer Traveling Cleaners

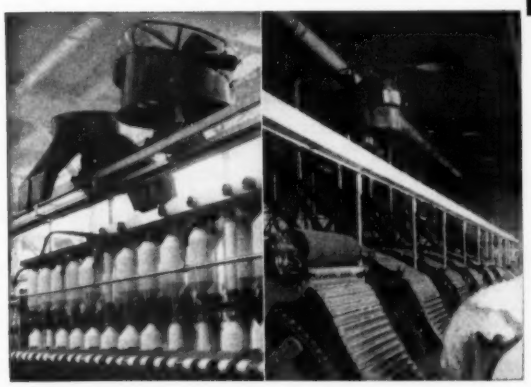
Traveling Cleaners remove lint from spinning frames and other textile machinery more thoroughly than by hand. Units run on track just above frames and direct blasts of air downward over the machine surfaces. Motion along track is either continuous or reversing to suit machinery layout and required cleaning period. Air distributors are of various sizes and shapes. Air volume, velocity and direction are adjustable. Electric conductors are enclosed and insulated for safety.



When **Flexible Cuff** extensions are used on Parks-Cramer air distributors, air blasts may be directed to relatively inaccessible or low down areas for more effective cleaning.







The **Up-draft Cleaner** improves textile mill housekeeping. Air blast is directed diagonally upward and revolves in a complete circle as the unit travels. Overhead surfaces are kept as clean as the frames.

PARKS-CRAMER TRAVELING CLEANERS have been used successfully since 1929. **17,000,000 spindles can't be wrong.**

•

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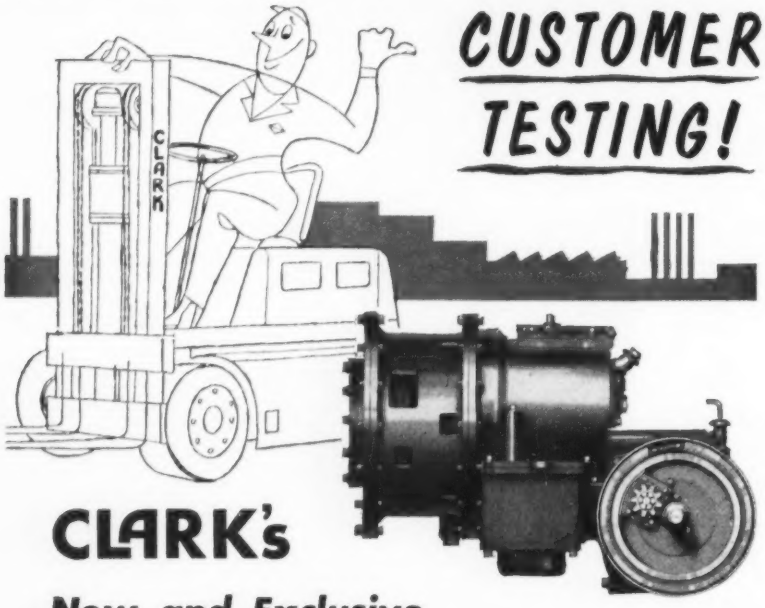
Certified Climate and Cleaning Systems

Fitchburg, Mass. . . . Charlotte, N. C.

Ready for you after 12 months of brutal



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1. **MORE WORK:** faster get-away, positive power without slippage; moves heavy loads and climbs ramps with ease.
2. **LOWER COST:** higher percentage of "on-the-job" time results from no clutch problems, "cushioning" effect on motor and drive members.
3. **GREATER SAFETY:** hydraulic brake system, linked to torque converter, automatically cuts power; engine cannot be started unless controls are in neutral.
4. **IMPROVES DRIVER EFFICIENCY:** finger-tip direction control and elimination of gear-shifting conserves operator energy.

Not one, but *eighteen* HYDRATORK-equipped trucks were placed in customers' plants for a full year of on-the-job testing. Without exception, these units proved that reduction in driver fatigue and of truck downtime results in greater production from HYDRATORK-equipped trucks.

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AUTHORIZED CLARK INDUSTRIAL TRUCK PARTS AND SERVICE STATIONS IN STRATEGIC LOCATIONS

the optimum pH range for best flocculation of alum, 6.5 to 7.0.

When the river was running red or was highly turbid, the treatment usually was tedious and inadequate. Frequently the turbid water resulted in difficult filter-plant operation. It was not sufficiently clarified, and the sand filter beds became plugged and had to be back-washed at rates that consumed large quantities of previously treated water and reduced the capacity of the filter plant from 550 to 100 gals. per min.

In desperation, alum was sometimes added in excessive amounts by alarmed personnel, who had the mistaken belief that a more liberal use of alum would give them less-turbid water for dyeing. As a result, pin-point alum floc was carried over into the storage tanks.

When the river was running red, it was usually necessary for the operators to double up in shifts in order to cope with the problem.

Cyanoethylated Cotton

(*Continued from page 96*)

BENDIGO: Only in that both are chemical modifications of the cotton fiber. Properties are quite different.

TW: *How does cyanoethylation stack up with mercerization?*

BENDIGO: Further developments and time will tell whether or not this new reaction will rank with mercerization. The reaction chemically alters the cotton and opens new potentials, most of which await exploration by textile technologists.

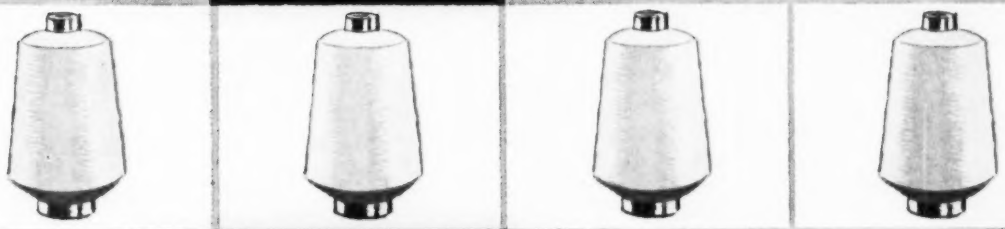
TW: *Is acrylonitrile a dangerous chemical?*

BENDIGO: It is toxic, flammable, and forms explosive mixtures with air. However, the tens of millions of pounds handled yearly prove that the properties need not be dangerous if reasonable safeguards are taken. Equipment is being designed to handle acrylonitrile in finishing plants. Anyone not familiar with the properties of this raw material is advised to get initial technical assistance from the producer.

TW: *Who produces acryonitrile?*

BENDIGO: American Cyanamid was the first producer and cooperated with ITT in its development of cyanoethylation. Monsanto Chemical Co. and Carbide & Carbon are also acrylonitrile producers.

THE TRIP FROM



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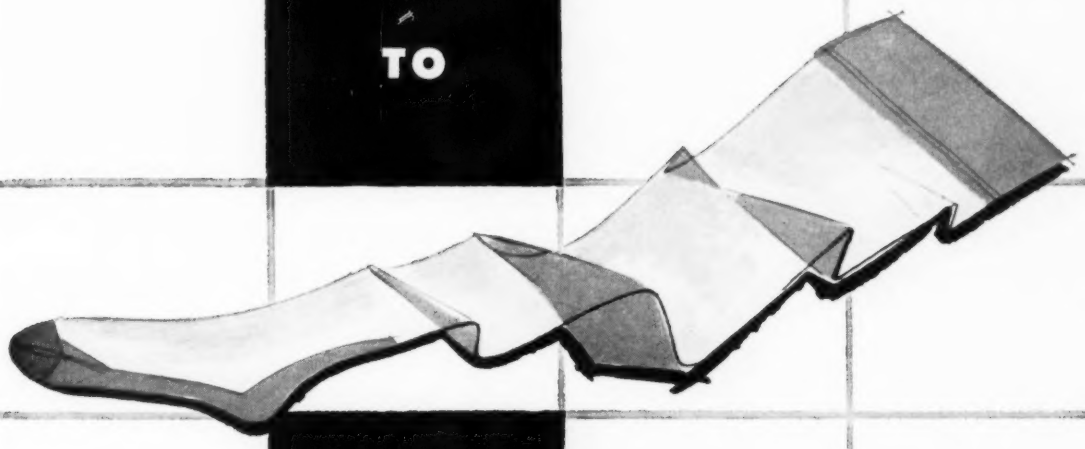

MEANS

that if it's going to be a success, your yarn must have expert processing built right into it, which is the way Oscar Heineman has been doing it for 60 years. Six decades of producing finest quality yarns for hosiery and tricot knitting, six decades of expert throwing of silk and now nylon, dacron, orlon and other synthetic fibers, is your guarantee that at Oscar Heineman's your trip will be successful. We're always looking for the privilege of showing others *how* it can be done.

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STEP UP PRODUCTION SAVINGS, AND QUALITY WITH FIELDEN DRIMETER MOISTURE CONTROLS

Savings based on the experience of Drimeter users will more than pay for the control in less than six months. For example, a completely automatic Fielden Drimeter installation, costing less than $2,500, saved the purchaser over $6,000 in the first year of operation, or better than 140% interest on his money invested the first year.

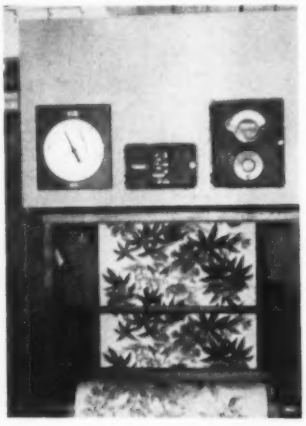
Users Report Many Benefits

Drimeter users find many benefits reflected in the quality of the goods they process. Some typical comments are "Drying speeds can be increased by safely raising the temperature, as Drimeter control permits us to leave sufficient moisture in the goods to act as a 'cushion' against high temperatures"; "Drying capacities have been increased without sacrificing our beautiful blue-whites"; "Uniformity of finishes is more readily achieved"; "Parchmentizing of synthetics is prevented"; "A softer, more mellow hand is secured, especially on spun rayon and waffle cloths"; "Print cloth takes color better, more uniformly, and without color migration when a 5% moisture content is maintained"; "Close adherence to the correct moisture content improves the finish."

One of the most troublesome variables in your production line is eliminated by a Fielden Drimeter which replaces human guessing with a uniform control that is automatically held to 1% of the predetermined moisture content you set on the control. Drimeter assures a uniformity of finish from order to order, as well as savings in time and money.

Your operator simply sets the Fielden Drimeter to the desired moisture content for the fabric being processed and modern electronics take over to insure you a consistently uniform moisture content control to 1% of predetermined setting.

The human factor of misjudgment and error is completely eliminated. Because they are aware of the troubles



caused by bringing goods off a drying machine too damp, many experienced operators lean backward to be sure that the goods are "dry enough." As fabric with normal regain feels damp when hot, the goods come off the frame bone dry. This situation causes the dryer to run slower, thus decreasing production, adding to cost unnecessarily, and becoming detrimental to the finish. A setting of 5%, 6%, or 8% on the Fielden Drimeter will automatically increase your production, lower your cost, and produce uniformly fine quality goods.

Write today for descriptive, illustrated literature on the Fielden Drimeter and other Fielden automatic moisture controls.

Fielden
INSTRUMENT DIVISION
ROBERTSHAW-FULTON CONTROLS CO.
2920 North 4th Street • Philadelphia, Pa.

Loom Assignments

(*Continued from page 137*)

per loom week and 5.75 cycles per hour.

Flagging: 30 secs. per loom per week.

This allowance was made for the weaver flagging the loom, usually by placing a bobbin on the arch of the loom, when he wants to call the mechanical condition of the loom to the fixer.

Inspecting: 20 secs. per loom per week.

This allowance was made for the cloth inspection the weaver makes when he starts to work. If a loom is making bad cloth, the weaver stops the loom.

Observing: 48 secs. per loom per week.

This allowance was made for the time the weaver spends observing the loom after he fixes a yarn break to see that the loom continues to run. Sometimes the loom stops without a yarn break, and the weaver starts the loom to see if it will keep running.

How Nomograph Was Compiled

The nomograph was compiled by using these allowances as constants and the stops per loom hour as the variable. For 1.0 stops per hour, the total time required per loom per week would be:

Element	*Mins. per loom per week*
Walking	7.2
Piecing	23.7
Inspecting	0.3
Flagging	0.5
Observing	0.8
Total	32.5 mins.

At 85% operating time, the weaver could handle 2,040 ÷ 32.5 = 63 looms.

The points on the graph for stops per loom hour are based on the total time required to operate a loom for a week. With an increase of 0.1 stops per hour, the total minutes per loom per week increases 2.37 mins.

What Increase in Loom Stops Does To Loom Assignments

With an increase in loom stops per hour from 1.0 to 1.5, the nomograph shows that the weaver should be operating 46 looms instead of 63 looms (at 85% operating time). To find this figure on the nomograph, place a ruler across the 85% and 1.5 points and read the number of looms per weaver. This decrease in efficiency is apparent.

Also, a calculation of the total time

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YALE WORKSAVER ELECTRIC TRUCKS are the perfect solution where plant and warehouse facilities . . . or limited budgets . . . had previously ruled out mechanical handling operations. YALE WORKSAVERS lift, move and stack materials over low-load flooring . . . unreinforced ramps and elevators . . . freight cars and trucks . . . save time, space, manpower and money.

Industries of all kinds choose YALE WORKSAVERS because they know the YALE name and reputation. They count on the versatility of WORKSAVERS . . . to do the job better, more economically. Contact your local YALE Representative or complete the coupon for a demonstration. Ask about the complete range of attachments that makes the WORKSAVER the most versatile tool in your plant.

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Please have your local representative call for an appointment

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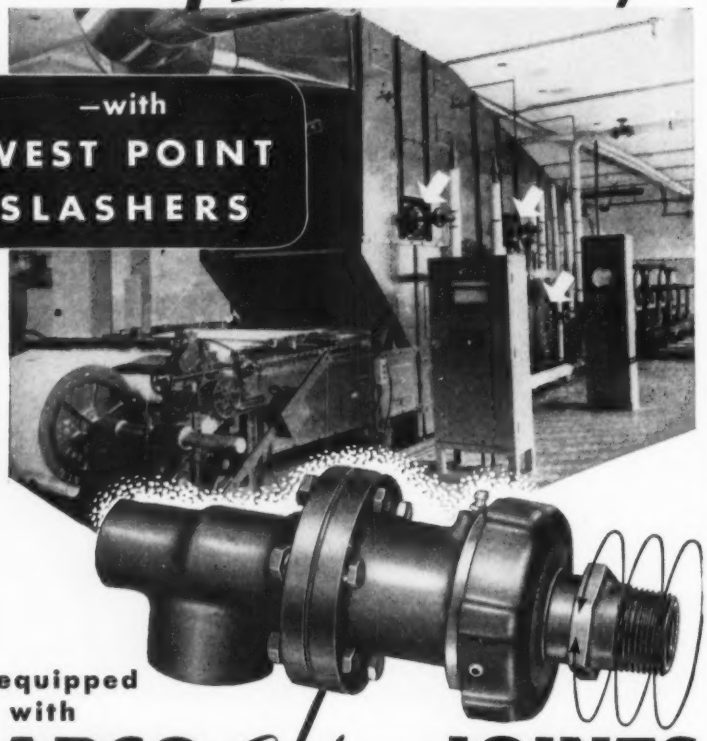

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- Trouble-free Performance! Thanks to long lasting "CTR" V-Type Seal Rings—a Barco Development.
- Free-Floating, Low Torque Installations. Cuts Power Costs up to 50%.
- Unexcelled Ability to withstand Vibration and Hard Usage.
- Better Temperature Control where steam is used for heating rolls due to better circulation.
- Low Maintenance; No Adjusting. Holds seal running or standing.

THE name "West Point" stands for carefully engineered designs and faultless performance in textile mill slashers everywhere. With West Point, as with other leading manufacturers, one key factor in performance is the selection of Revolving Joints.

To provide *trouble-free* rotating connections for steam supply and condensate drainage, West Point Slashers are regularly equipped with Barco Revolving Joints—*as indicated in the above installation.*

Let us send you complete information about Barco's new *improved* Type IBR Revolving Joints for Textile Machine Dryers, Slashers, Dry Cans, Sanforizers. *Catalog 300 on request.*

BARCO MANUFACTURING CO.
534L Hough Street • Barrington, Illinois
In Canada: The Holden Co., Ltd.

BARCO— *THE ONLY TRULY COMPLETE LINE OF FLEXIBLE BALL, SWIVEL, SWING, AND REVOLVING JOINTS*

per week required to operate a loom at 1.5 stops per hour shows:

Element	*Mins. per loom per week*
Walking	7.2
Piecing	35.6
Inspecting	.3
Flagging	.5
Observing	.8
Total	44.4 mins.

With 63 looms, the total time per week required is $44.4 \times 63 = 2{,}797$ mins.; but at 85% operating time there are only 2,040 mins. in the working week. Some of the looms will have to wait some time to be attended to, and production will be low.

However, instead of affecting productive efficiency, the increase in loom stops can take its toll out of the weaver's rest period. Suppose a weaver's standard job is 40 looms at 1.8 stops per hour and 85% operating time. What happens if the stops per hour go up to 2.0 and the weaver keeps production up out of his rest time? The nomograph shows that he would be working 94% of the time and resting only 6% of the time. Under these circumstances it wouldn't take long for the weaver to become dissatisfied.

When the end breakage goes up, the mill must be prepared to meet the situation. Perhaps the trouble might be three or four warps in the weaver's set, and these could be changed. If the end breakage is over-all, spare hands might be used and the loom assignment reduced.

Narrow-Fabric Weaving

(Continued from page 113)

looms so that a large variety of patterns can be woven on the same warp. The jacquard-design inserts for a new pattern are simply inserted in the main jacquard-card body, and the same harness arrangement is usually used.

For example, suppose a label 1 in. wide has a black warp running with gray, green, and white filling to weave the name of a clothing manufacturer. With no other changes than the jacquard card insert (with call-shuttle and lettering changes) and changing the filling in the shuttles, the same warp is woven into a label for another manufacturer with blue, red, and white letters predominating.

"Card boys," who will later become weavers, change the jacquard cards or place inserts in them.

The card boys climb a ladder, remove the old insert, bring it down,

Controlled diameter yarns for best textile performance

Pittsburgh Fiber Glass Yarns are made by the direct melt process, using a system of controls that produces continuous filament yarns of exceptionally uniform fiber diameters.

All standard sizes are available—150's, 225's, 450's and 900's—in any twist and ply up to light cordages. It is packaged for use in all conventional textile machinery.

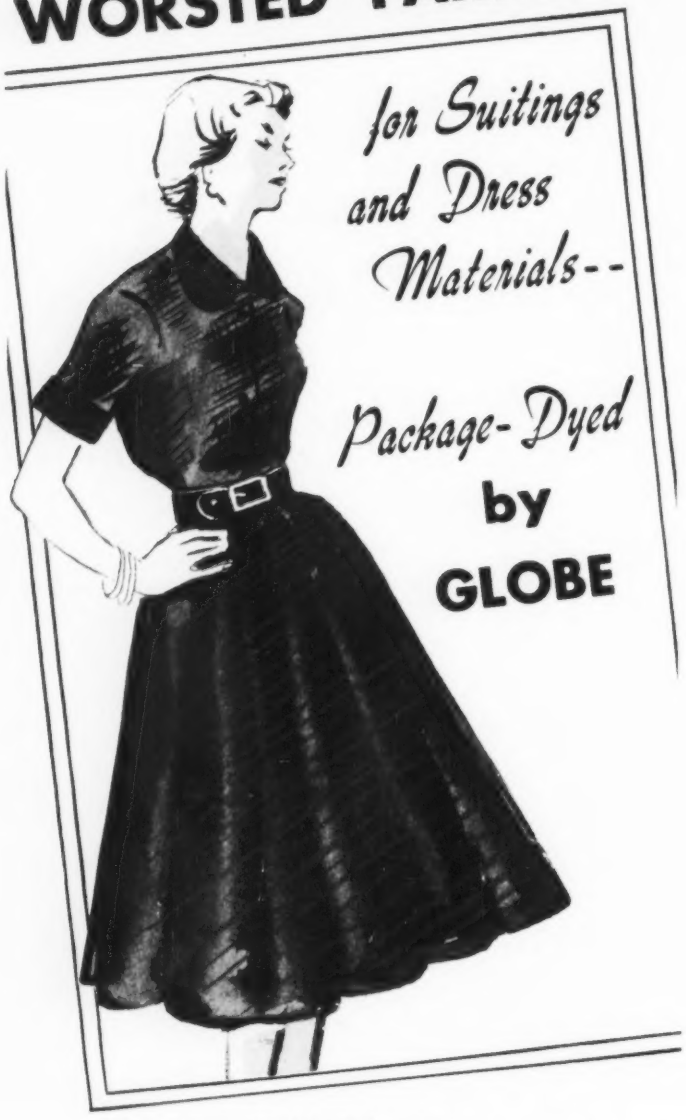
Your inspection and tests of Pittsburgh Yarns are invited and may be arranged through any of our offices. Pittsburgh Plate Glass Company, Fiber Glass Division, 420 Fort Duquesne Boulevard, Pittsburgh 22, Pa. District Offices: New York, Chicago, Cincinnati, Cleveland, Detroit, Washington.

FIBER PPG GLASS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

WORSTED YARNS



Worsted yarns dyed by Globe are your assurance of bright, clear colors, good matches, and superior knitting and weaving qualities.

1865 Globe Dye Works Co. 1953

Globe does package dyeing on tubes, skein and warp dyeing, warp mercerizing, and sizing.

Yarns we process include cotton, rayon, worsted, nylon, linen, blend and novelty yarns. Also Acrilan—Dacron—Orlon.

4500 Worth Street **Philadelphia 24, Pa.**

Jefferson 5-3301

take the new insert up the ladder, and fasten it to the jacquard-card body.

This work takes only a few minutes.

Normally, all card boys work on the first shift, where most changes are made. When it is necessary to change a style on the second or third shifts, the weavers change the cards.

Insert cards removed from the looms are dated and stored in racks just outside the weave room. When yearly inventory is taken, inserts that have not been used within the year are removed from the rack and stored in a warehouse where they are kept for five years and discarded if not used.

Loom-Maintenance Practices Pay Off at Alkahn

Alkahn's Paterson plant has 33 looms, all equipped with top jacquard harness motions. All looms except four were manufactured by Fletcher Works.

The looms operate with two to four shuttles on two-, three-, and four-bank battens and make silk and filament-rayon labels in widths from $\frac{7}{8}$ to 3 ins. Loom speeds range from 72 to 100 ppm., depending on the width of the loom.

Two loomfixers maintain the 33 looms. Each weaver operates two looms.

Production varies from 70 to 80% and usually stays in the high seventies. These figures look low, but production is really high when you consider the time lost for frequent pattern changes.

Production is checked daily, and a graph is kept in the office to show the production of each set of looms.

When production bogs down on a set of looms for an extended period, the weaver on those two looms is changed to another set of looms to determine if the cause is mechanical in nature. The trouble is usually mechanical, and production is soon brought up to standard.

The loomfixing methods used at Alkahn are largely responsible for the high efficiency of the looms. All loom motions are inspected periodically for worn or weak-looking parts. Substandard parts are removed and discarded.

Since many loom parts are expensive, the mill management men were hesitant to throw away seemingly usable parts when the method was first considered. But after the method was used on a small group of looms for a time, results showed it definitely paid off.

Now loom breakdowns average one per shift, and the loomfixers have time to patrol the weave room to check loom troubles before they become serious.

Actual production figures show

For more information, write direct or use Reader Service post card.

Need low cost, long life, good oil retention?

here's how manufacturers of textile machinery assure them with NEEDLE BEARINGS

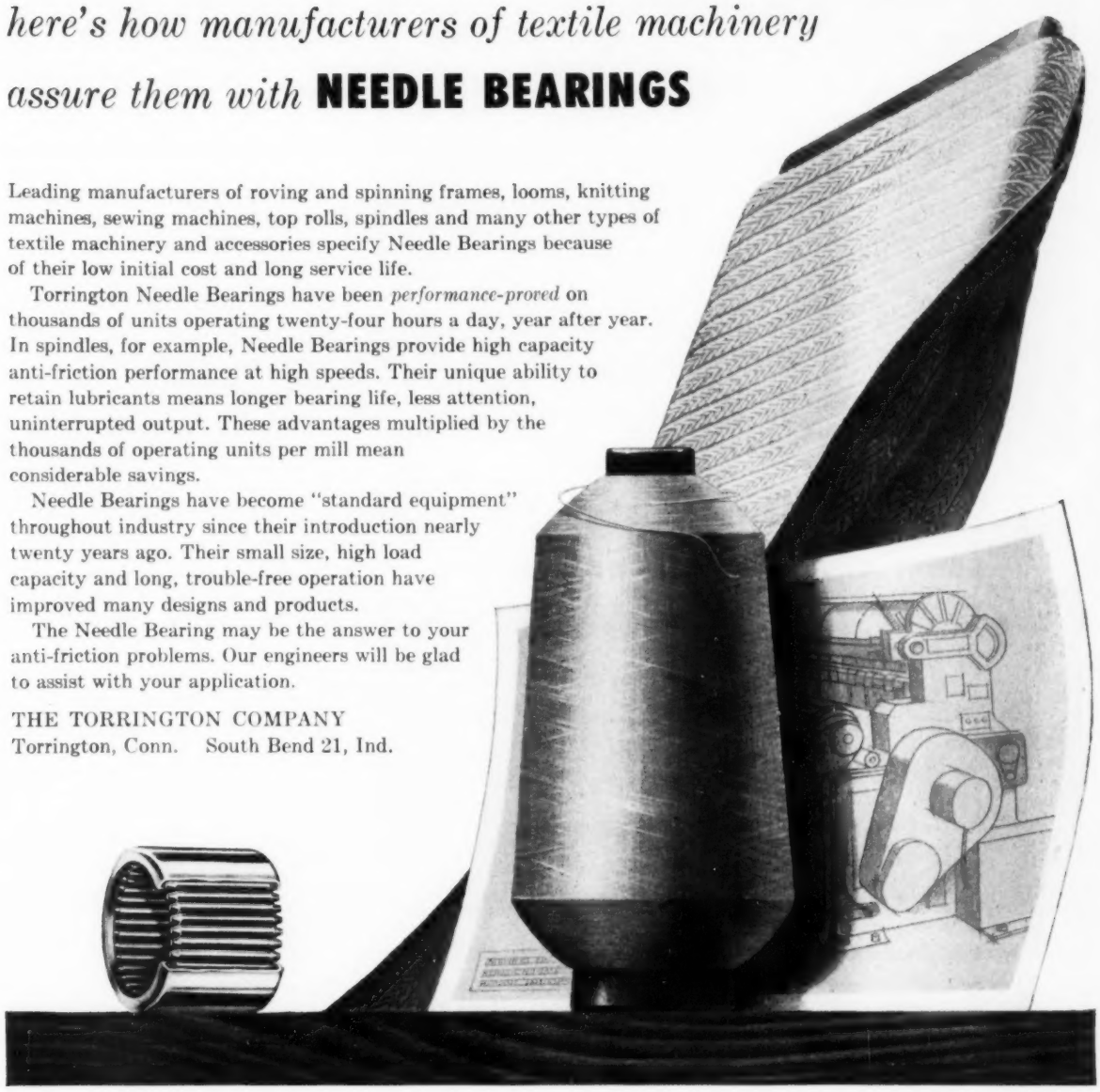
Leading manufacturers of roving and spinning frames, looms, knitting machines, sewing machines, top rolls, spindles and many other types of textile machinery and accessories specify Needle Bearings because of their low initial cost and long service life.

Torrington Needle Bearings have been *performance-proved* on thousands of units operating twenty-four hours a day, year after year. In spindles, for example, Needle Bearings provide high capacity anti-friction performance at high speeds. Their unique ability to retain lubricants means longer bearing life, less attention, uninterrupted output. These advantages multiplied by the thousands of operating units per mill mean considerable savings.

Needle Bearings have become "standard equipment" throughout industry since their introduction nearly twenty years ago. Their small size, high load capacity and long, trouble-free operation have improved many designs and products.

The Needle Bearing may be the answer to your anti-friction problems. Our engineers will be glad to assist with your application.

THE TORRINGTON COMPANY
Torrington, Conn. South Bend 21, Ind.



TORRINGTON *NEEDLE* **BEARINGS**

Needle • Spherical Roller • Tapered Roller • Cylindrical Roller • Ball • Needle Rollers

Trade-marks of leading textile machinery manufacturers who use Torrington Needle Bearings.

WARNER & SWASEY — TEXTILE MACHINERY DIVISION

Union Special

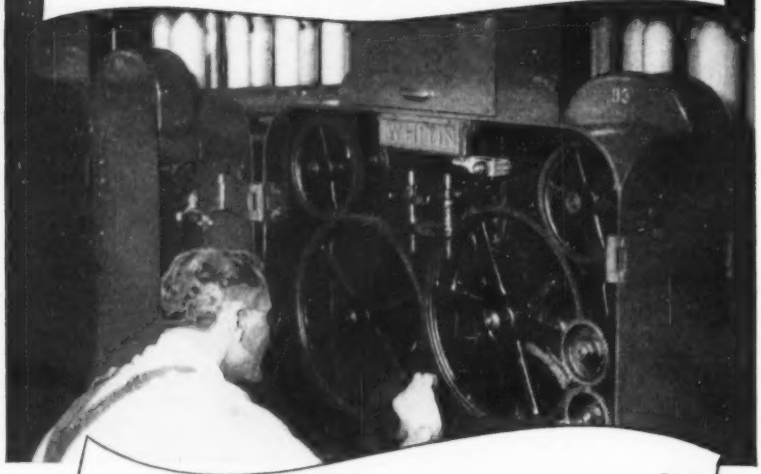
KARL LIEBERKNECHT, INC.

Whitin

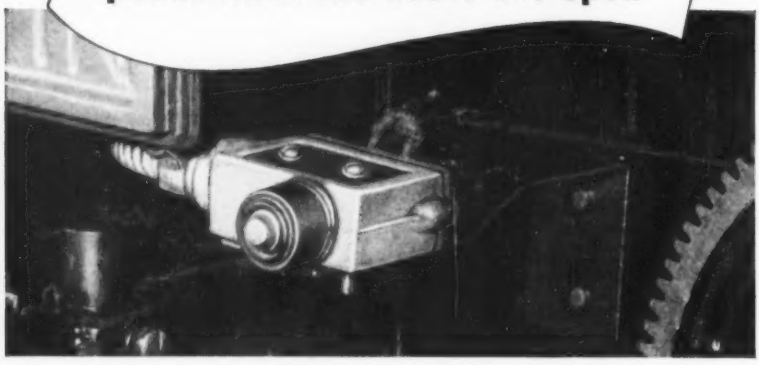
BARBER COLMAN

For more information, write direct or use Reader Service post card.

HE can't get his fingers hurt in these gears because



this MICRO switch shuts off power when the doors are open



• Plant engineers of Borden Mills, Kingsport, Tenn., have added additional safety to 189 of their spinning frames in this way. They have found MICRO switches ideal because they are sealed against the effects of lint-laden atmosphere, are ruggedly housed and have sufficient overtravel to withstand the banging of heavy doors.

Such plugging of danger sources—both for operators and machines—with MICRO switches is common practice among plant engineers and maintenance men. They find in MICRO switches the most efficient and economical way to make equipment not only safer, but more automatic, more productive.

There's a MICRO authorized distributor near you. He'll be glad to help you select the switch best suited to your needs. For special advice and consultation, get in touch with your nearest MICRO branch office.

MICRO A DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

MAKERS OF PRECISION SWITCHES

FREEPORT, ILLINOIS

that the loom-maintenance system increased weave-room production 5%.

Labels are inspected at the plant, sent out to be finished (fortunately for Alkahn, the finisher is in the adjoining building), inspected again after finishing, and shipped to the customer in rolls or cut into individual labels.

Labels for many customers are stocked so that immediate shipments can be made when orders are received.

And when labels are not in stock, Alkahn is set up to start weaving them the same day orders are received.

New Hosiery Machine

(*Continued from page 105*)

Four Feeds Are Used In Pattern Knitting

Because four feeds are in operation during patterning and because each feed has four yarn fingers, a sock containing 16 colors can be made. Both heel and toe are made on the front feed.

A device to trap each yarn as it is brought out of action incorporates an electric stop motion. One yarn can be withdrawn from the clamp without releasing the other yarns.

Each end of yarn has an individual take-up spring, above which is an insulated bar. If the yarn breaks, the take-up spring strikes the bar to complete the circuit and stop the machine.

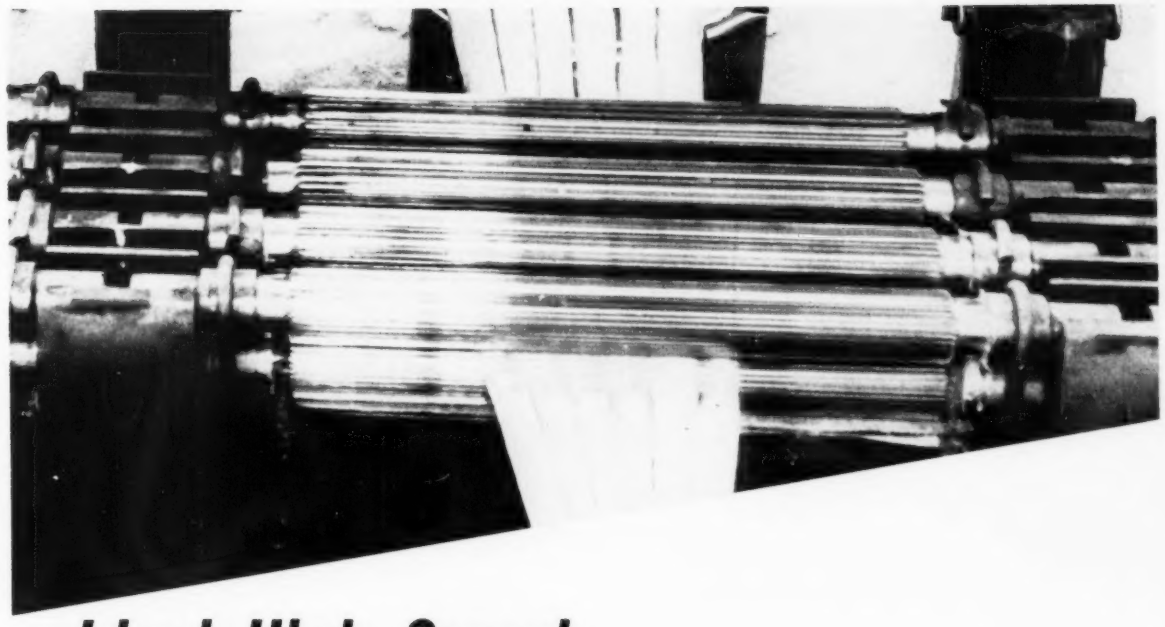
As a switch cam is not necessary in this new machine, no long needle butts are required in the instep half of the needles. The instep needles are left at the sinker level when heel and toe knitting starts. This principle eliminates the conventional latch ring.

During oscillatory knitting, the first selected needle to reach the feed point is kept at its tuck position by a swinging split cam. This needle takes the yarn but does not cast off its loop. Large openings along the gore line and between diamonds are eliminated, and a clear-cut line separates each diamond.

A gauge has been made to set all feeds to give an equal stitch length and avoid streaks in the fabric. Once all four feeds have been set, all stitch cams are controlled from one central source.

Alternate needles may be selected to lay in rubber by a pattern drum or by alternate needles fitted with high and low butts.

The design of the machine frame is a departure from conventional standards. The cylinder occupies a central position in the frame. In the rear corner are two vertical main-pattern drums to control the knitting ele-



Ideal High Speed Ball Bearing Drawing Rolls Cut Drawing Costs

Original Cost—Two Ideal Drawing Roll units outproduce three conventional ones. They cost you less to buy.

Less Maintenance—You need fewer operators to tend Ideal Drawing Rolls because there are fewer rolls to tend. They require less attention per unit because their hardened and ground fluted rolls never nick or burr to cause ball ups, and because they are **permanently** aligned and synchronized.

Ideal Construction also eliminates 90% of the usual costly job of taking down, cleaning, reconditioning, scouring, removing burrs, and oiling.

Ideal Drawing Rolls also improve quality and increase production. When the Evener Motion, which was shown at Greenville, is in production it can be added by simply substituting it for the back top roll.

Get full information on Ideal High Speed Ball Bearing Drawing Rolls before you replace a single unit in your mill.

Cuts Drawing Cost

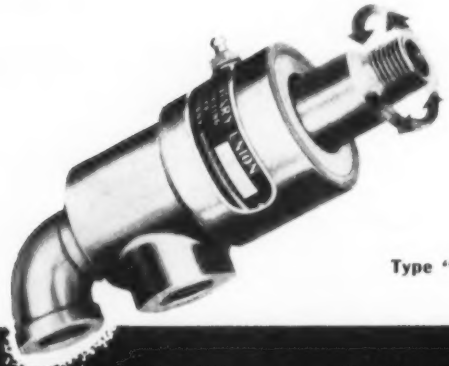
Ideal Industries, Inc.
Bessemer City, N. C.

For more information, write direct or use Reader Service post card.

The ROTARY UNION is the only revolving steam joint which is guaranteed to give perfect service 8 hours a day for a full year . . . without requiring mechanical maintenance of any sort. Make good on this guarantee is requested on only 8 out of every 1000 units sold, and many users report three years or more of comparatively trouble-free service.

With the ROTARY UNION on the job, your Saturday morning tightening-up headaches . . . your labor maintenance costs . . . and your down-time due to sealing failures are eliminated for at least a year, and are practically non-existent for a long time thereafter.

Discover for yourself what really trouble-free service can be like. Order a set of ROTARY UNIONS for your slashers, dry cans, calenders, printing, or coating machines. It takes only a few minutes to install them . . . and they cost no more than ordinary unguaranteed revolving steam joints. Contact our nearest office or write Dept. 10W for our Catalog.



Pipe Sizes

¼" through 3"

Type "S"

PERFECTING SERVICE COMPANY

332 Atando Avenue (Home Office and Factory) Charlotte, N. C.

Atlanta, Chicago, Cleveland, Philadelphia, Providence, New York, Montreal, Toronto

ments, the clutch, and the design drums.

Main-Drum Racks Are of Equal Length

The main-drum movements are of equal length. High and low chain-link lugs are not necessary. Both drums turn together, and any suitable number of changes can be made if the steps are equally divided.

The pattern chain is located across the back of the machine so that the whole chain is visible. The pattern chain remains idle while the design drums are active.

The oscillating quadrant works horizontally at the lower end of the jack cylinders and has an adjustable throw. The vertical clutch eliminates the bevel-gear drive.

The cylinder rides on vertical anti-friction bearings. The arrangement of clutch and quadrant and the absence of speed gears make for a balanced unit that turns easily.

The individual motor drive is situated close to the base of the lower jack cylinder and is controlled by a push button on the upper frame. A handle near the cylinder head controls the motor clutch. There are no projecting pulleys and handles, but the machine can be jogged slowly.

All parts below the knitting head are enclosed by plates that screw onto the machine frame. This arrangement gives the machine a neat appearance and keeps lint from the motor, design drums, main drums, and clutch members.

Plans for manufacture and sales have not been completed.

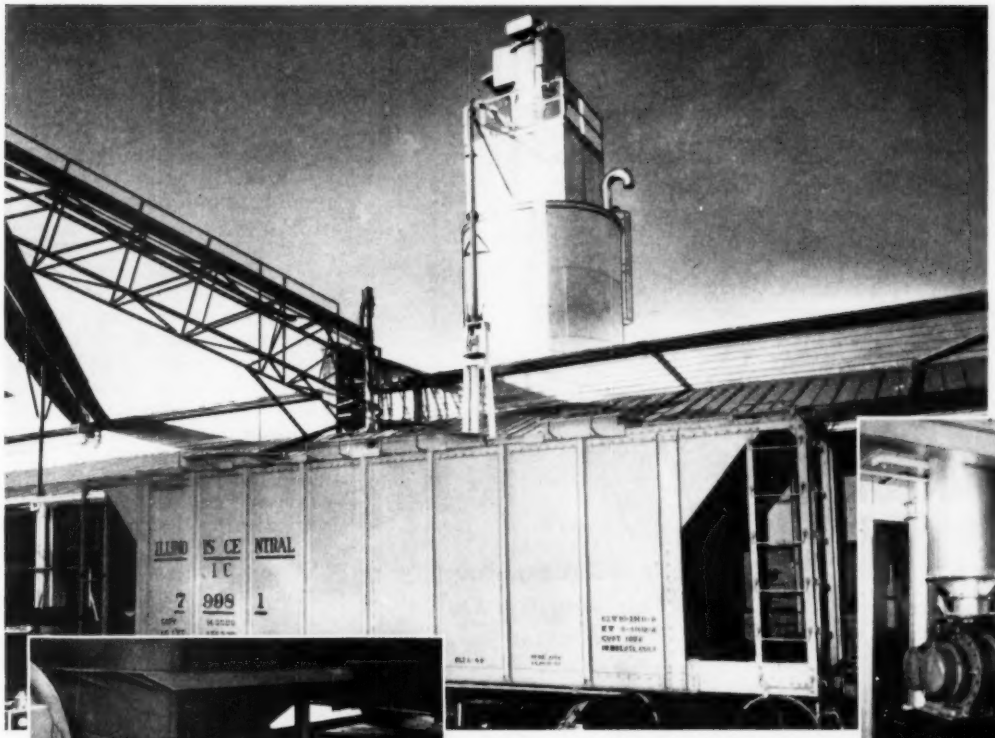
Employee Attitude

(*Continued from page 117*)

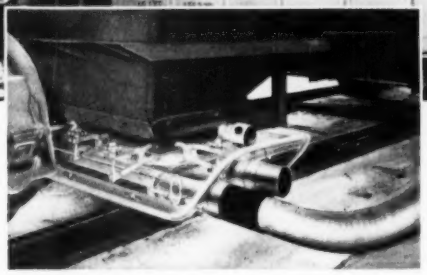
ployees can change. All these factors affect productivity. Management can stay abreast of these psychological changes and do something about them if it stays close to the worker.

An ingrained work habit is not easy to change. It is not enough to tell a weaver how he is to patrol as a result of a workload change; the training approach must take into consideration his entrenched attitude toward his job. That attitude must change before he will accept his new work habits. This change has to be brought about by sharing and planning the new method with the employee. If you know how someone thinks, you can do a better job of putting him at ease.

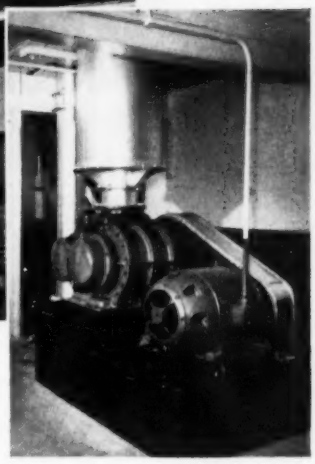
The other side of the coin is sharing the financial rewards of productivity. An employee will be moti-



Hopper-bottom car being unloaded. Airveyor filter installed above storage bin. Shows permanent conveying duct from car to filter.



Portable twin nozzle attached to car hopper.



Exhauster unit which furnishes the air-power for the Airveyor system.

Avondale unloads bulk starch with AIRVEYOR®

Avondale Mills at two of its plants, Alexander City and Pell City, Alabama, is using the Airveyor System for unloading and conveying bulk starch from hopper-bottom cars. Illustrated above is the system installed at Alexander City for unloading and delivering the starch to a storage bin.

Previous to the installation of the Airveyor System at Alexander City, starch was received in bags; some were broken in transit and in trucking from cars to the warehouse.

The Airveyor has changed this. Waste is reduced to a minimum; hand trucking is eliminated. Labor required—two men to attach and detach twin nozzle to hoppers of the car. Unloading time, approximately 2 hours and twenty minutes for one car. Starch is available to the slasher room from the storage bin with a capacity of approximately three carloads.

If you are still *manhandling* your incoming starch in bags, it will pay you to get all the facts about the Airveyor for pneumatic conveying. Why not take advantage of Fuller's 27 years of experience in air-conveying? Write today for full information.

Fuller

CONVEYS BY AIR

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ORIGINAL SUPPLIERS TO THE U.S.A.
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PLATTS' METALLIC CLOTHING PUTS THE FIBRES INTO THE WEB
SO WHY MAKE STRIPPING WASTE CHANGE TO PLATTS'METALLIC CLOTHING & SAVE THAT WASTE.
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AN EFFICIENT FITTING ORGANISATION
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vated to increase his production if he is given a share of the resulting gains.

2. Finest Caliber of Leadership

If you are going to increase production by motivating employees, you have to have the finest caliber of leadership, both at the executive and supervisory levels.

Here the signs are encouraging. Management training is receiving more attention than any other activity on the human-relations front.

Further, the nature of the supervisory role is changing. The supervisor is being called on to act as a communicator, an educator, and a trainer; management in turn is teaching him the skills necessary to perform these functions. Where this kind of change is taking place, management recognizes that the common practice of promoting the "best worker" into supervision does not always result in the best man being selected for the supervisory job. The importance of the proper management of men is beginning to receive the attention it deserves as an integral part of production management. No longer is it sufficient for the foreman to merely know the operation—he must know his people, and how to lead them, as well.

Employees have an image of what a supervisor should be and should do, and they become frustrated and disgruntled when they cannot get from the supervisor the help or answers they want or need. The same situation, of course, is true further up the ladder; top management must be responsive to the supervisors' needs and desires for leadership.

3. Insight Into Resistance

The collective-bargaining approach can help productivity if the company gains an insight into employee resistance. Companies and unions have mutual interests; the company supplies the jobs that provide the very basis of existence for the unions. That's about as big a common interest as two parties to an agreement could have.

If there is hostility between company and union, the adverse effect on production is frequently evident. The wage system in the company (itself a product of collective bargaining in an organized company) can be a motivator or an inhibitor of individual production.

How a company and a union get along can either encourage individual initiative to produce or encourage group pressures to limit production. Also, employee acceptance of standards and timestudies, and performance in relation to them, depends in a large

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EMBOSSING SERVICES ...

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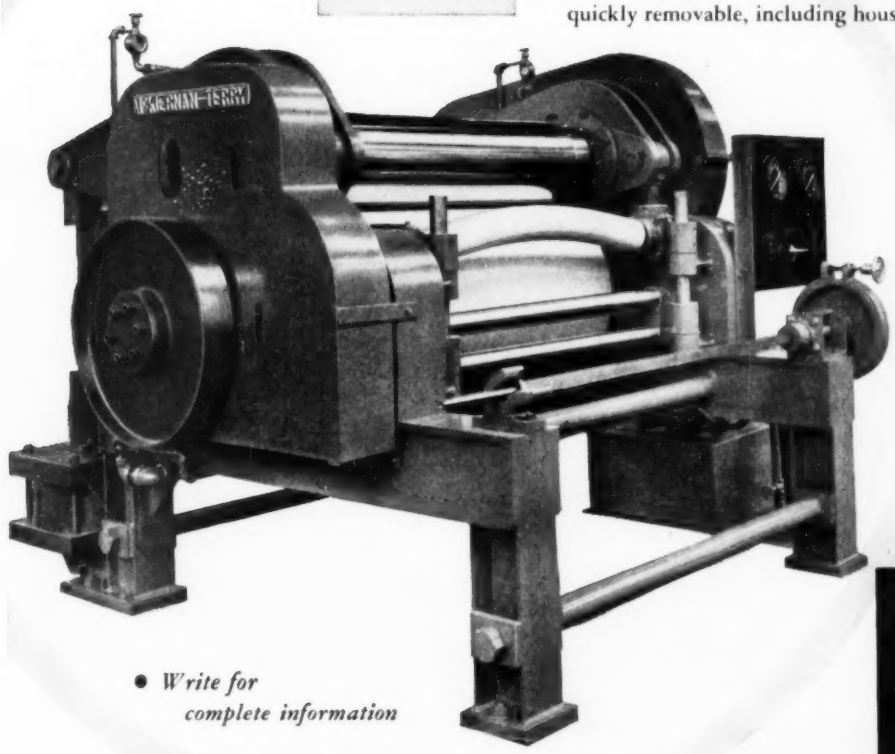
This new McKiernan-Terry machine is the most important advance in calender design in many years. Its functional design means quickest changeover for any of its three applications . . . it can be converted from one service to another in a few hours.

Suitable for pressures up to 75 tons, hydraulic or pneumatic . . . special oil seals to withstand high temperatures . . . lubricated by oil circulating and cooling system . . . heavy-duty anti-friction roll bearings which are easily and quickly removable, including housings, by hydraulic pressure.



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Model 2181—New version of the world's most widely used portable dial scale.

Today more than ever

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part on the atmosphere and the degree of trust and good faith in which collective bargaining is conducted.

However, seeking insight into resistance if a union is present can become a "which-came-first" guessing game. Do the day-to-day relations between employee and supervision influence the collective-bargaining relationship between union and company, or vice-versa? Or is it a two-way proposition? Regardless, there is certainly a relationship between the two. If this relationship can be properly identified and understood, it can be made a favorable factor in turning resistance into cooperation.

Dope-Dyed Fibers

(*Continued from page 139*)

of the dyes used—not generally as good as the original dope-dyed fiber.

With these few simple examples, the designer can imagine the possibilities, and limitations, of three-fiber and four-fiber blends.

As experience has shown, the ultimate use of the fabric must be kept in mind by the designer, dyer, finisher, and advertising copywriter. The best-engineered fabric may be misused by the consumer if he is not aware of the purpose for which the fabric was designed. Garments constructed of any of the synthetic fibers—dope-dyed or not, blended or 100%—must be designed—lining, seams, styling, and merchandising—to fit into a definite consumer-recognized category such as hand washable, dry cleanable, washing-machine fast, or something as definite. The dope-dyed acetates can be used in any of these categories if the companion fibers and fabric design permit.

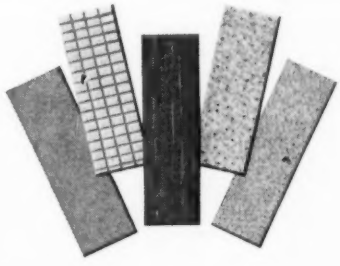
Fibro

Viscose in dope-dyed form is supplied only by Courtaulds at present. There is not the mass of American experience to draw on with respect to dope-dyed Fibro as there is with the acetate, but the British have explored this field more deeply.

Dope-dyed viscose seems to lend itself most readily to blending with wool and synthetic protein fibers such as Ardil, Vicara, and Merinova, where cross dyeing with selected acid dyes permits a broad range of color possibilities.

Dope-dyed viscose is the same as undyed viscose as regards color affinity. Colorfastness is equal to or better than equivalent shades dyed in vat colors on viscose; but caution must be exercised to pick colors that mini-

Unusual take-up roll cover grips fabrics firmly without marking them



ARMSTRONG OFFERS A FULL LINE OF TAKE-UP ROLL COVERINGS

Whatever your preference, Armstrong can supply a wide choice of take-up roll coverings of synthetic rubber, cork and synthetic, plain or gridded cork.

Need a take-up roll covering made especially for high-count fabrics? A covering that will give you firm, even take-up tension without marking? If you do, try Armstrong's NO-732 Take-up Roll Covering.

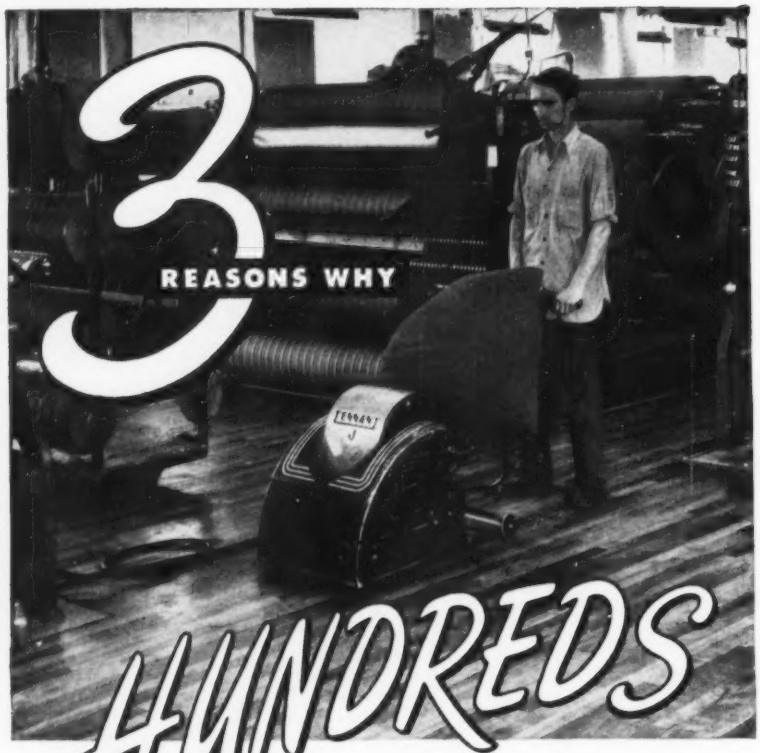
To make the NO-732, Armstrong developed a special synthetic rubber with almost twice the coefficient of friction generally possible with rubber. With this compound, even extra-smooth NO-732 gets a firm grip on hard-to-hold fabrics. And like most synthetic rubbers, this NO-732 compound gives exceptionally long service.

Next time your Armstrong representative calls, ask him for a sample and test NO-732 yourself. Feel its smooth creped finish. Rub it on your shirtsleeve and notice how little pressure you need to make it grip the fabric.

Then put Armstrong's NO-732 on one of your looms. Arrange for a test soon through your regular mill supply salesman or write to Armstrong Cork Company, Textile Products Department, 6710 Dauphin Street, Lancaster, Pa. Armstrong's NO-732 is available for export.

ARMSTRONG'S TAKE-UP ROLL COVERS

Product of the Armstrong Cork Company, Textile Products Department, Lancaster, Pa.



OF MILLS USE THE
TENNANT *System*
OF FLOOR MAINTENANCE

Its cost-saving performance and ease of use have established TENNANT as *THE accepted floor maintenance system of the U.S. textile industry.* This unique acceptance is due to these practical advantages . . .

1. CUTS FLOOR MAINTENANCE COSTS
You save 4 ways—in *manhours,* by cleaning faster in one operation with 1 man; you cut *accident costs* by DRY-cleaning (no wet, slick floors). You avoid needless *floor repair costs* . . . and reduce *stock losses* from snags, splinters and soilage.

2. EASIEST TO USE: eliminates scrubbing!
Works like magic! You get rid of dark, rough, oil-soaked fibers . . . and have a smooth, bright, *hardened* floor surface that resists dirt. Stays clean longer! Ends costly, harmful scrubbing and wet-mopping.

3. FITS YOUR MILL'S SPECIFIC NEEDS
Your TENNANT System is individually selected and planned, 100% *specialized* for your mill. Assures you of best results. Personal installation and periodic inspection . . . *without charge.*

ONLY DAILY CARE needed is fast, low cost sweeping. Oil, dirt and dust do not cling to the smooth, hard surface of a **Tennantized** floor. Dirt sweeps off easily . . . Keeps your floor bright and attractive.

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TENNANT Established 1870

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Get helpful case histories, illustrated bulletins, etc. Learn HOW YOUR MILL CAN SAVE ON MAINTENANCE COSTS . . with the Tennant System.

FLOOR MAINTENANCE SYSTEM
Creators of the TENNANT SYSTEM OF FLOOR MAINTENANCE—Manufacturers of Equipment & Materials for MAINTENANCE OF FLOORS, DECKS, ROOFS, HIGHWAYS!

mize viscose staining in cross dyeing or union dyeing.

Merinova

Dope-dyed Merinova is a wet-spun casein fiber made from blended skim milk. The wet-spun filaments are washed, dried, cut to length, and then formaldehyde-treated in an autoclave. After the autoclave "tanning" the fiber is dried and opened.

Offered in 20 colors, in a range from 3 to 27 dens. and from 1½ to 14 ins., Merinova is remarkably resistant to bleaching, (though the natural-colored Merinova can be bleached), and to diazotizing, pressure dyeing, vat-reduction procedures (in most colors), and carbonizing. These unusual properties make the fiber very versatile in blends where cross-dyeing or union-dyeing methods would be harmful or impossible with wool.

As is the case with Vicara, Merinova is not recommended for use alone, as its wet strength is rather low. Blends of dope-dyed Merinova, however, may give unusual results.

This wool-like fiber may be used to add to the esthetic value of a fabric without needlessly complicating the processing and dyeing stages. A note of caution: Merinova should not be dried above 160° F.

Dynel

A new arrival in the dope-dyed fiber field is Dynel. There is no experience upon which to draw in making suggestions about the use of colored Dynel. It is known, however, that the colored fiber has equivalent fastness to the other types of dope-dyed fibers.

Dynel will dye only at or near the boil, so cross-dyeing possibilities, without danger of staining the colored Dynel, are unlimited. Any staining of the fiber that occurs below the boil can be removed by a good scour.

A white Dynel was placed in the line at the same time the colors were announced.

General Processing

With regard to the processing characteristics and procedures prior to finishing, these facts are common to all the dope-dyed fibers:

- Tensile strength of the fibers is affected very little, if any, by incorporation of color pigments. Less than a 10% loss can be expected.
- Running characteristics (opening, blending, carding, spinning) are the same, generally, as the corresponding undyed fiber and usually much better than stock- or top-dyed fibers.
- The added weight of pigment in the fibers does not affect the filament

RING TRAVELERS

for every spinning and twisting purpose

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AMERICAN

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HICKS

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WILSON

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WENTWORTH

Double Duty
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We regularly make ring travelers in the standard common sizes, and also design ring travelers to your individual specifications, to meet special requirements. Make use of our long experience in designing and manufacturing ring travelers . . . the most extensive in the field . . . to improve your spinning. Ask us for recommendations. National Ring Traveler Company, Pawtucket, R. I. and Charlotte, N. C.

FREDERIC L. CHASE, JR., Pres. and Treas.
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OLDEST AND LARGEST MANUFACTURER OF RING SPINNING AND TWISTING TRAVELERS IN THE UNITED STATES

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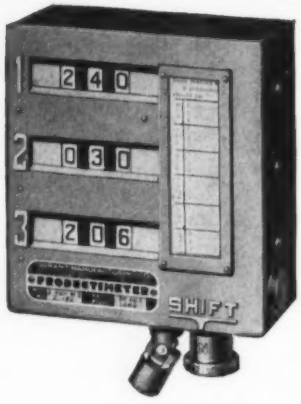
PRODUCTIMETER *Progress*



PICK COUNTER

PICK COUNTER (Model 4-PC-R-3) — Introduction of this improved model provided better readability and easier operation. The heavy drive construction assures trouble-free performance. It is tamper proof, dust proof and rust proof.

"Y" ELECTRIC

"Y" ELECTRIC — High speed, accurate, with maximum readability. Totally enclosed in compact new type case for protection against dust and moisture. Operates accurately over wide current fluctuations.

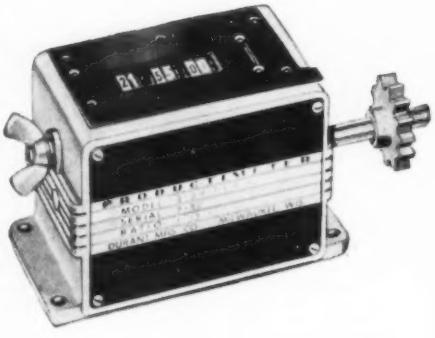
New Finish on Entire Line!

Attractive Alaska Gray and Seal Brown Combination.

DURANT DOFFMETER

The Durant Doffmeter is a compact, predetermined counter designed to cut off the loom or signal when the preset number of yards is reached. Eliminates cut marks and waste ends by assuring uniform yardage . . . simplifies inventory control.

Present day high costs make the installation of Durant Doffmeters on every loom a practical money saving investment. Plan now . . . write or contact us for detailed information.



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PRODUCTIMETERS SINCE 1879 *Count Everything*

denier or the resultant yarn number, because all fibers and yarns are made on a basis of weight per unit length.

• Blending techniques follow the established rules: the earlier the blending can be started, the more intimate the final blend. On the cotton system, then, the best place to start is after the first carding of the cotton; a clean lap of carded cotton is then doubled with a lap of the dope-dyed fiber. When no cotton is involved, a weighing hopper feed is the easiest method —right at the first mixer.

• In worsted and in woolen blending, the same precept applies—the earlier the better—except that in blends of wool a consideration must be made of the expensive "mixed waste" that is a by-product of too-early blending. Propriety and experience must establish the most-effective and least-expensive method.

Waste Control

(*Continued from page 127*)

Who Sets the Standard

Let everyone concerned see how the waste standards work out. Explain how the present standards will be revised and how all the people concerned will have a chance to discuss and criticize the new standard. If anyone disagrees with the standard, he will have an opportunity to prove his arguments.

The secret of a successful program is to include as many people as possible in your discussion. Give each person a text of the waste session so that he can take it home to show his family. Make it evident that you have gone to a lot of trouble and effort to enlist the cooperation of your listeners.

Now that you have told everybody how you are going to revise waste standards, go ahead and revise them. As soon as your standards are revised, you are ready for another conference.

During the conferences you will probably discover that some workers don't know the difference between returnable waste and nonreturnable waste. You can give out a list of these wastes, and you can also post lists.

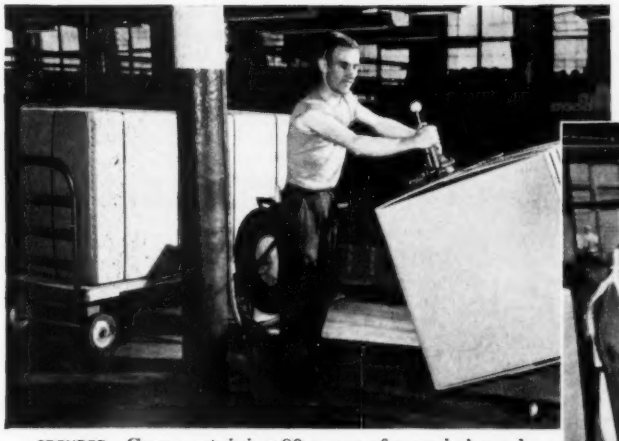
The number of supervisors who do not know how a graph is made is amazing. Show them. Build up a graph step by step in front of their eyes. Then when waste graphs are posted in each department, they will know how to follow them, and they will be able to explain the graphs to their operators.

Also explain the difficulties that reworkable waste causes in the subsequent processes. One idea is to color the waste and take color pictures of the results.

For more information, write direct or use Reader Service post card.

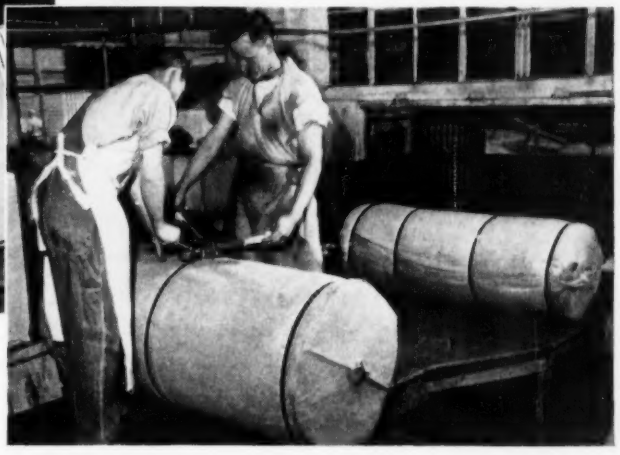
Acme Steel Strapping Insures S.A. *(Safe Arrival)*

Used 18 years by Firestone Textiles plant to Protect Shipments



SECURED. Case containing 80 cones of yarn is bound, right on a platform truck, with Acme Steel Strapping from portable reel. Easy-to-handle strapping makes it an easy, one-man job.

TIRE CORD is shipped in these large rolls. They are first covered with wrapping of burlap, then bound with four bands of Acme Steel Strapping. Two men strap 10 to 12 rolls an hour.



Eighteen years ago, the first rolls of tire cord fabric produced at the Firestone Textiles plant at Gastonia, N. C., were bound with Acme Steel Strapping.

That was 1935, and ever since, all tire cord and industrial fabrics produced at the plant have been protected, in storage and in transit, by this strong, versatile steel strapping.

This example is typical of the way hundreds of companies in the textile industry are using Acme Steel Strapping to protect their products, build customer good will, cut costs, and reduce damage claims.

That's what we mean by S.A. (Safe Arrival).

Whatever your shipping problem, Acme Steel Strapping on the job in your shipping room, will mean greater protection, greater economy and greater ease of handling.

Talk it over with your Acme Steel Representative soon, (look in the yellow pages of your phone book). Or write Acme Steel Products Division, Dept. TW-103, 2840 Archer Avenue, Chicago 8, Illinois. Or Acme Steel Company of Canada, Ltd., 660 St. Catherine Street W., Montreal, Quebec.

ACME STEEL

STRAP IT . . . STITCH IT . . . SHIP IT . . . SAFELY!

* Double Production!
* Halve machine floor space!
* Cut Power Costs!
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Multifeeder RIB
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Round Table

(*Continued from page 164*)

yarn strength or appearance. Carders generally hesitate in increasing cylinder speeds because of an alleged centrifugal effect on the card clothing. However, no proof has been given that this effect does exist to any damaging degree within the speed limits of the Grover-Dunlap tests.

No reason is known why the mill showing such good results on these 10 cards with increased speeds did not change all the cards in the room. There is a feeling, probably unjustified, among mill men that you can't have both quality and high production from a card. So the range of production is kept between 6 and 12 lbs. per hr., depending on the quality desired.

Three statements made in a summary of the Grover-Dunlap tests are very important and undoubtedly true: "The greatest single factor affecting neps is the cotton itself. Yarn strengths were influenced more by the inherent fiber strength of the cotton than by any of the changes made in the card conditions. Yarn strengths in all cases were affected more by factors other than changes in card speeds, productions, or settings."

The present recommendations for more and better card product feature a lickerin speed of 860 rpm. with cylinder speed of 165 rpm. and doffer speeds from 5 to 35 rpm., depending on the quality desired. Tests show a reduction in neps and increased production with little change in skein strength of yarn. One mill has been running 98 cards for about one year with a lickerin speed of 795 rpm. with a production of 25.5 lbs. per hr., which represents a gain of 62% over former production of 15.7 lbs. per hr.

The only criticism of this setup that sounds valid is that this high lickerin speed brings the surface speed of the lickerin too close to that of the cylinder. There is danger of the cylinder wire failing to take the fibers from the lickerin teeth and thus increase neps, or waste, or both. A reduction in lickerin speed or a slight increase in cylinder speed can overcome this stated objection and may prove the answer to the carder's prayer for more and better card sliver with stronger yarn of improved appearance.

Boss Carder

Newburyport, Mass.

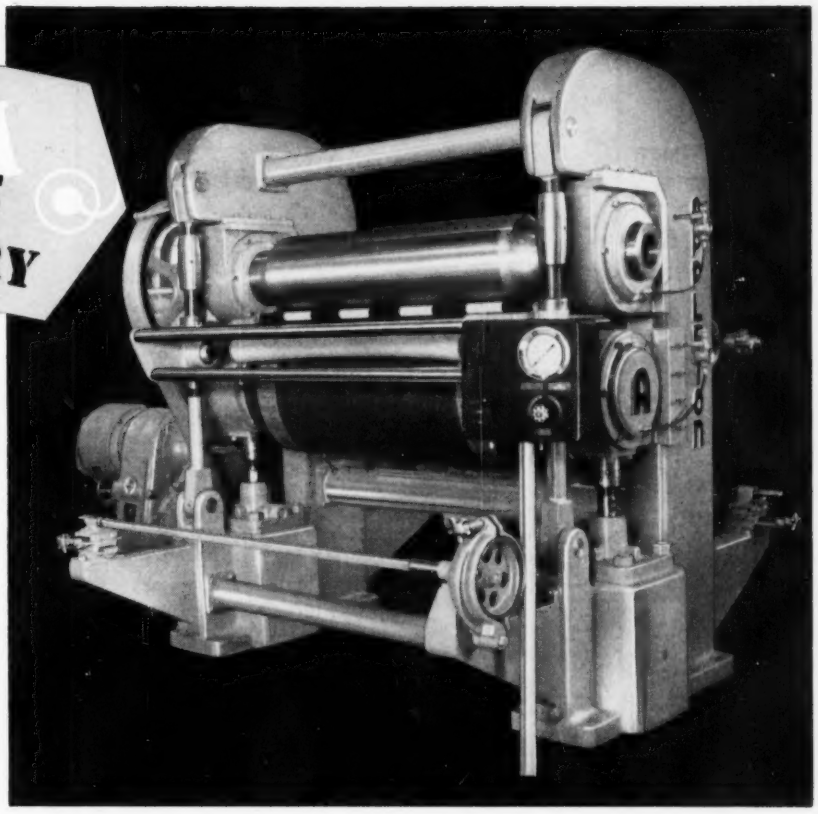
New H-B Loom

(*Continued from page 101*)

placement of parts. Mill officials expect a reduction of 70% in parts replacements over looms now in production in the mill. A corresponding improvement in efficiency of operation is also expected.

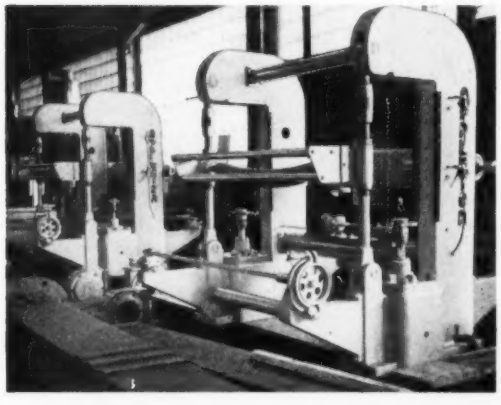
2. For ease of employee operation. The officials want to remove all possible manual labor from weaving cloth. For example, they expect less loom repairs on the part of the loomfixers and,

THE to TEXTILE INDUSTRY



APPLETON TWO-ROLL 50-TON HYDRAULIC SCHREINER CALENDER

Designed for maximum production and minimum maintenance, this Appleton Two-Roll 50-Ton Hydraulic Schreiner Calender is particularly well adapted for "Everglaze" schreiner work. Both rolls are mounted in anti-friction bearings, with force feed oil lubrication. A gas burner, water-cooled cylinder, and a variable speed motor to operate on A. C. current are other salient features. Some of America's finest textile machinery is made by Appleton . . . invite us in to discuss your requirements . . . a call or a card will bring our representative, at no obligation, of course.



Appleton Two-Roll 50-Ton Hydraulic Schreiner Calender Under Construction

APPLETON MACHINE COMPANY
APPLETON WISCONSIN

CUSTOM-BUILDERS OF PULP, PAPER AND TEXTILE MILL MACHINES

IMPROVEMENT IN FABRIC AT A LOWER COST OF MANUFACTURE

SAVE ON WASTE

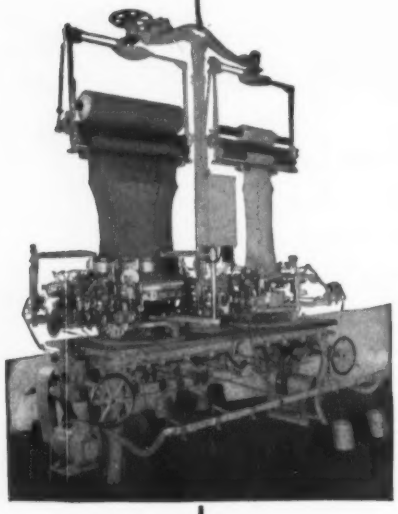
SAVE ON LABOR

SAVE ON NEEDLES

many mills call it the "perfect cloth machine"!

ACTUAL MACHINE COMPARISONS

have opened the eyes of many knitting mill owners to the virtues of the new Tompkins D-2. New stop motion with furnishing wheels control each end of yarn and prevent imperfect feeding of yarn to needles—IMPERFECTIONS ARE CAUGHT BEFORE THEY GET INTO THE CLOTH! Yarn tension always remains constant and steady for delivery from furnishing wheels—for a reduction of at least 50% in needle replacement expense!



ONE OPERATOR running Tompkins D-2 Double Head Spring Needle Machines (pictured) WILL TURN OUT TWICE AS MUCH FABRIC as one operator running Multiple Feed Latch Needle Machines with same number of bobbins —plus PERFECT CLOTH ALL THE WAY!

see the TOMPKINS D-2 in production on whatever yarn or fabric you wish . . .

SEE FOR YOURSELF!

The Tompkins D-2 Double Head Spring Needle Knitting Machine is equipped with individual motor and drive for each head. Optional equipment available includes a three-color (3-thread) striper as well as a fool-proof pattern attachment for putting in or taking out a pattern.

Write, phone or wire for data sheet showing actual machine comparisons . . .

ESTABLISHED 1846

TOMPKINS BROS. CO.

629 Oneida St. SYRACUSE 4, N. Y.

as a result, fewer looms that have to be restarted by the weavers.

The weavers' physical labor is lowered because the push button eliminates starting the loom manually.

The addition of antifriction bearings in the main shafts of the looms permits the weavers to easily push the lay backwards to any desired position; and since controlled-position stopping is possible, the lay has to be positioned manually only infrequently.

3. To keep humidity where it is most needed without keeping refrigerated air at a high humidity reading.

4. To have a clean weave room without manual cleaning. The overhead cleaning system, without greasy surfaces on the loom, keeps the looms clean. The only cleaning required to keep a clean weave room is floor sweeping once each shift.

Exploring the Community

(*Continued from page 145*)

"Seminole Record," the "Victory Bulletin," "Pinkney News," "Myrtle Headlines," "What's News at Osceola," "Winget Locals," "Mutual Messenger," "Arkray Life," "Myers Mill Reporter," "Ridge Observer," "Arlington Events," and "Main Office News" to see who is visiting, vacationing, fishing (and how many fish were caught), who is getting married, who has a new baby, or who is bereaved.

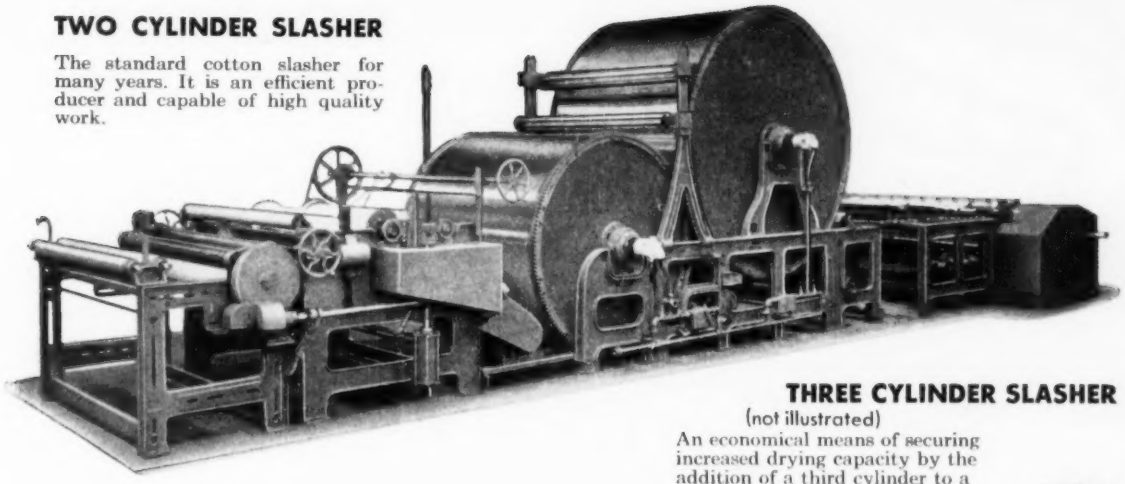
A full page, "The Bulletin Board," is dedicated to news about those in the services.

Sports are well covered and special promotion is given to programs sponsored by the company, including the Little League for youngsters and the American Legion Junior Baseball. From the latter some top-ranking ball players have been recruited by major leagues.

Textiles Review, once a year, goes all out on an all-inclusive, company-sponsored United Fund Drive. It has found that donations to the Boy Scouts, Girl Scouts, Red Cross, Salvation Army, Cancer Fund, and other worthy causes have greatly increased since the plan was inaugurated. But the *Review* does not consider its work completed when the drive is over. When the local Lions Club decided to sell brooms to pay for eye tests and new glasses for Gaston County children not able to afford them, teams were appointed for each plant. As the broom sale progressed, it was given appropriate boosts by photos and comments in the *Review*. The result was more than $1,000 net

TWO CYLINDER SLASHER

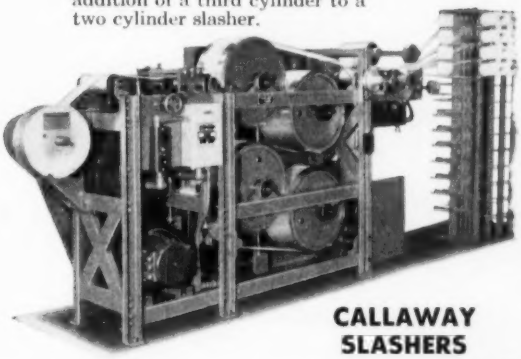
The standard cotton slasher for many years. It is an efficient producer and capable of high quality work.



THREE CYLINDER SLASHER

(not illustrated)

An economical means of securing increased drying capacity by the addition of a third cylinder to a two cylinder slasher.



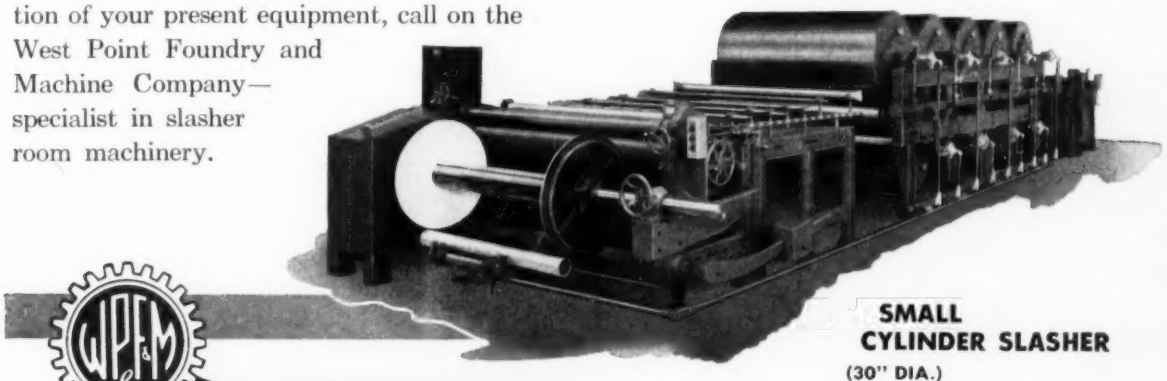
A Slasher To Fit Every Requirement

There's a WPF&M slasher for virtually every slasher room requirement . . . sample slashing or full production . . . the lightest gauze or the heaviest sheeting . . . natural fibers or synthetics. Whether you require a complete slasher installation, from size preparation to the finished warp, or modernization of your present equipment, call on the West Point Foundry and Machine Company—specialist in slasher room machinery.

CALLAWAY SLASHERS

Model 50 **Model 51** (illustrated)

Small, narrow-width machines capable of making full width warps for samples, testing, etc., using small amounts of yarn.



SMALL CYLINDER SLASHER

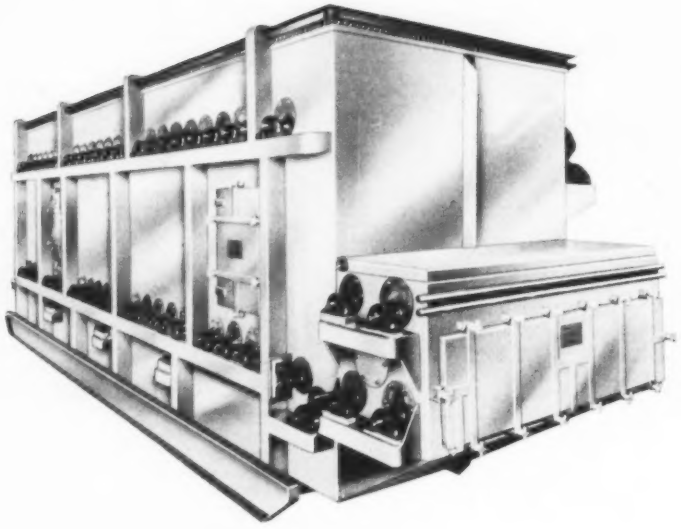
(30" DIA.)

A versatile machine suitable for cut staple and filament yarns. Can also be used for cotton.

WEST POINT FOUNDRY & MACHINE COMPANY
WEST POINT, GEORGIA

WRITE for SPECIFICATIONS

We will be glad to send you additional information on the 3 slasher units featured above and detail on the WPF&M Air-Dri, Cyl-Air, and Hi-Speed Slashers, without obligation.



If you buy textile machinery, this ad is important to you.

Because you're interested, we'd like to present some of the basic features of our Stainless Steel Agers. Tower Acid Agers are fabricated entirely of corrosion resistant stainless steel; a new concept in ager design. Proper design of structural members provides maximum strength. Welded construction entirely eliminates costly repair and maintenance resulting from cracks and leaks. Tower Agers have a positive pulse-type acid injection system that insures you of maximum color value and uniformity of aging with a minimum of acid consumption. These units may be constructed for use as combination vat and acid agers. A Tower Stainless Steel Ager arrives at your plant completely assembled and accurately aligned, minimizing costly field installation and production delays. You may be assured that the fundamental principle of Tower is to produce the finest equipment available, in design, material and workmanship.

TOWER IRON WORKS

50 BORDEN ST., PROVIDENCE 3, R. I.

TEXTILE DIVISION

for the Gastonia Lions from Textiles-Incorporated employees.

Civic Projects Are Promoted

Textiles Review goes to bat for county and city school-board elections, hospital-building drives, better roads, and all those civic projects that represent money expended by and benefits to the taxpayer. It takes an active part in the annual city clean-up campaign, and does more than its duty on blood bank work.

Editor Jones says, "Of course we tie in with current projects going on in the city and in Gaston County. Our paper should, since its readers are all interested citizens and voters." Taxpayers, too, he could have added, because most Textiles-Incorporated employees own their homes or small farms.

Not all the news in *Textiles Review* is local or personal. Each issue there's a story, with pictures, about something of interest that is going on elsewhere. Farmers Market in Los Angeles, the famous Ware collection of glass flowers in the Botanical Museum at Harvard University, and points of tourist interest in North Carolina have been featured. When the big debate was on in Congress about statehood for Hawaii, Editor Jones invited Riley H. Allen, editor of the *Honolulu Star-Bulletin*, to be guest columnist of *Textiles Review* to state the reasons why Hawaii asks for statehood.

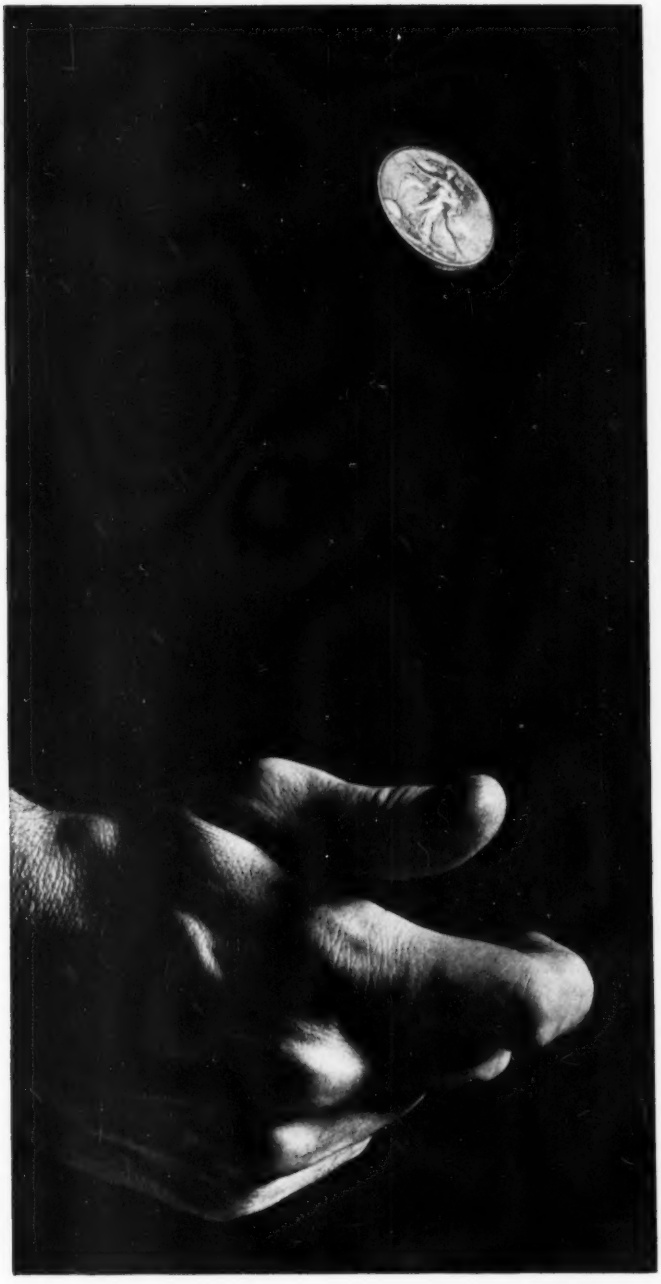
Company Policies Are Announced

When a modernization program is undertaken or completed in one of the Textiles-Incorporated plants, it is featured in the *Review* as a symbol of progressive management. The *Review* first announces important company policies such as the establishment of the five A. G. Myers scholarships of $3,000 each, and a student loan fund for high school graduates of company families, under the auspices of Myers-Textiles Foundation, Inc. A full-page ad on the company's products is run on occasion because an employee wants to be proud of his job and proud of his boss and proud of his mill's products. But everything printed about the company is strictly factual.

It's a farsighted management that leaves the *Review*'s policy to a farsighted editor like Everett Jones. He sees to it that the *Review* is printed on the best of stock and that plenty of pictures and art work and cartoons make the format attractive.

For all phases of the *Review*'s work, including its staff of 11 plant reporters, the publication secretary, and the editor, Textiles-Incorporated ex-

For more information, write direct or use Reader Service post card.



Is this the way to run a business?

The day-to-day management of a business requires prompt decisions. The successful executive never relies on chance alone, but makes his decisions within the framework of the long-range plans he and his associates have prepared.

When you become an Iselin client, plans can be made with the confidence that they can be successfully completed. The assurance of the money required, plus the free time to devote to profitable activities, helps make plans work.

You will find, as many other firms have, that the more comprehensive your plans are, the more accurate your decisions can be, and the more you can benefit from Iselin's service.

WILLIAM ISELIN & CO., INC.

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FOUNDED IN 1808

FOR ECONOMICAL BUDGETS

DARNELL CASTERS & E-Z ROLL WHEELS

1 GREATER FLOOR PROTECTION

. . . is but one of the many advantages accruing from the use of precision-made Darnell Casters and Wheels. Add to this—

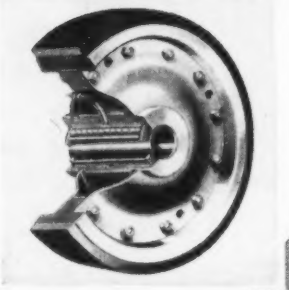
2 LONGER EQUIPMENT LIFE

. . . and you benefit from savings that will prompt you to standardize on Darnell products. Employees, too, will appreciate the—

3 EASY EQUIPMENT MOVABILITY

DARNELL CASTERS & E-Z ROLL WHEELS

Always SWIVEL and ROLL



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60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

Free Manual

pends approximately $35,000 annually. That is a small price to pay for the solid worth of community relations engendered by the paper. And it is heartening to see *Textiles Review* flourishing as a vital means of communication in a large textile area.

Books of Interest

ORGANIZING FOR IMPROVED PRODUCTION AND COST CONTROL, Mfg. Series No. 202; American Management Association, 330 W. 42nd St., New York 36, N. Y.; paper, 64 pages, $1.25.

This collection of papers presented at the Hotel Statler proves that many of the problems facing the textile man are not confined to the textile industry. Developing cost awareness, materials-handling programs, the organization of the operating executive's job, and engineering and maintenance problems have much in common throughout American industry.

The round table discussion on the organization of the operating executive's job contains particularly valuable comments on supervisory responsibilities, complaints, and problems.

GUIDES TO MEETING TOMORROW'S PRODUCTION NEEDS, Mfg. Series No. 209; American Management Association, 330 W. 42nd St., New York 36, N. Y.; paper, 64 pages, $1.25.

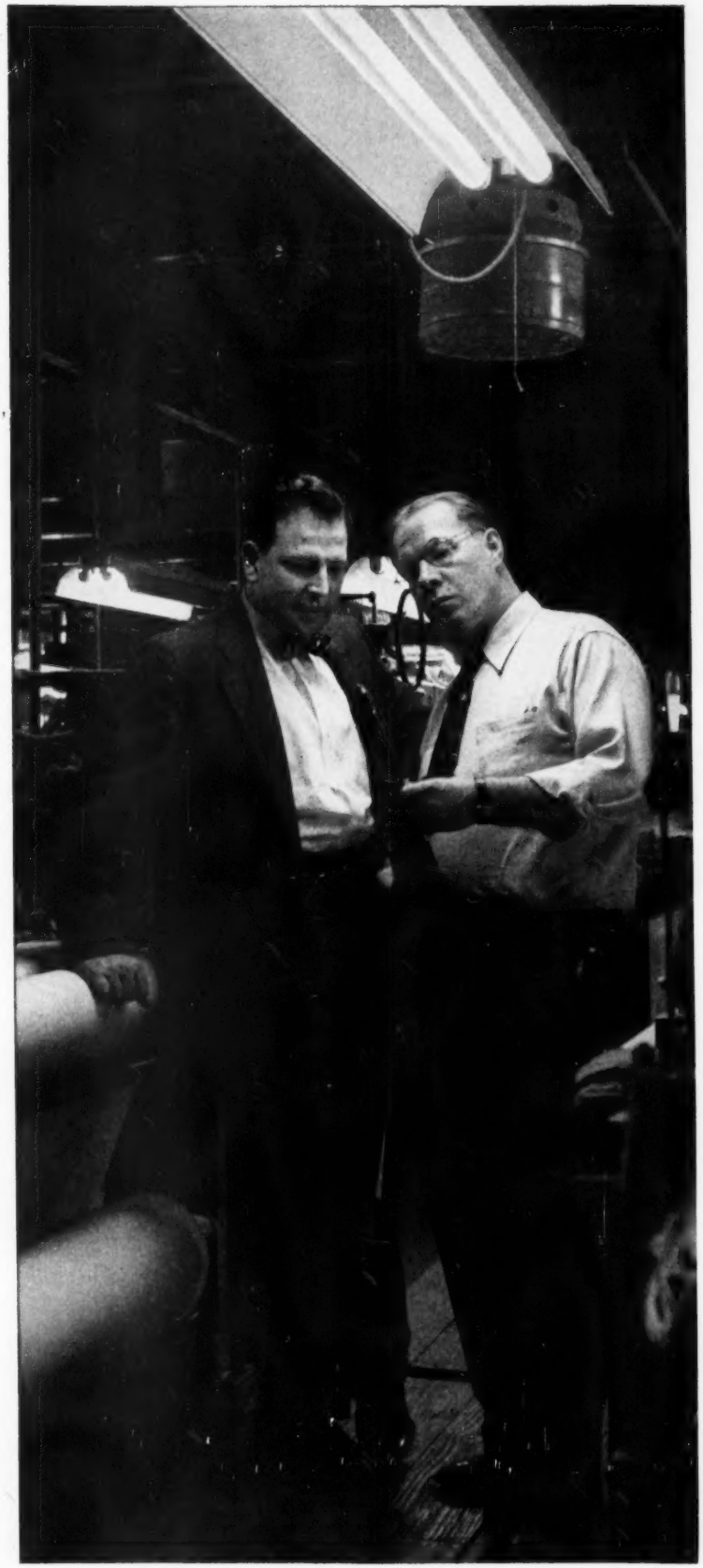
The papers presented at the spring conference of the AMA are collected here. The papers include several discussions of general interest on federal controls, the effects of defense spending, and economic resources; and more specific papers on the production problems of cost reduction, production control, and methods engineering.

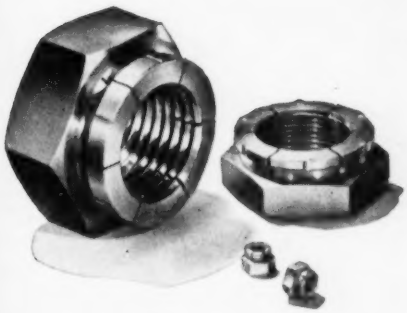
There is very little in these papers that a textile man could just pull out and use, but the discussions do contain ideas that could direct his thinking into useful channels.

MANUAL ON INDUSTRIAL WATER, 1953; American Society For Testing Materials, 1916 Race St., Philadelphia 3, Pa.; cloth, 336 pages, $4.25.

Additional information in this manual

For more information, write direct or use Reader Service post card.





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on ASTM methods of testing industrial water clarifies the use of these methods. These methods include sampling, analysis, and reporting results. A glossary and industrial-water requirements are included. Important chapters cover the difficulties caused by industrial water, the composition of industrial water and water-formed deposits, and the analysis and identification of these deposits.

Engineers, process-water users, plant designers, and consultants should find this book useful and enlightening.

PROCEEDINGS OF THE FALL MEETING OF TEXTILE QUALITY CONTROL ASSOCIATION, October 3, 1952; TQCA, 2516 Wilkinson Blvd., Charlotte, N. C., paper, 42 pages, $5.

The TQCA, which is now the ASQC, has collected the papers presented at N. C. State College last October for the benefit of anyone who would like to keep the papers for reference or anyone who couldn't make the meeting. The papers include discussions of quality control in finishing, detection and control of honeydew, mill evaluation of nep control, cotton-fiber measurements, evaluation of yarn variation, and a comparison of perforated card screens with regular card screens.

One of the values of this collection is that you can ponder the significance of John Duerst's formulas for evaluating variation at your leisure.

TAX SHELTER IN BUSINESS; by William J. Casey and J. K. Lasser; Business Reports, Inc., One Main St., Roslyn, L. I., N. Y., 156 pages, $12.50.

The authors are interested in the extent to which tax considerations shape business policy and planning, and the strategies that will enable a business to hold its own in the face of today's tax structure.

One feature of the report is a description of how Royal Little built up his textile company by the use of such tax-exempt institutions as charitable trusts, profit-sharing trusts, Puerto Rican corporations, and local governments.

Mill reference data carefully selected to be helpful in solving daily mill problems will appear in

TEXTILE WORLD's
Mid-November
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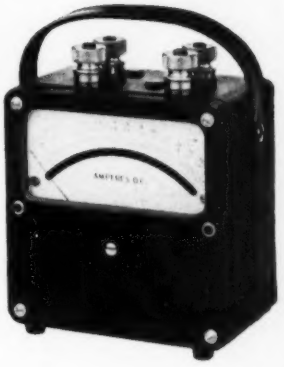


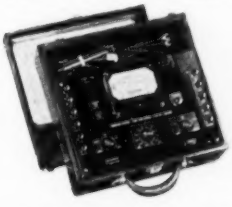
Light Meters—compact Model 703 illustrated widely used for quick measurements in mills and offices—measures all types of lighting direct. Also Model 614 with wide range of light values, and range-changing switch.

Pocket-Size Testers—compact, low cost test instruments available as Ohmmeters — Insulation Testers — Volt-Ohmmeters — and Volt-Ohm-Milliammeters which have well selected group of ranges to cover most electrical servicing needs.

Model 932

LOOM MOTOR AMMETER—has special damping to dampen out heavy surges when checking loom motors. Scale calibrated 1/2/5 amperes. Models also available for all a-c and d-c testing and plant maintenance needs.

Panel and Switchboard Instruments—a complete line of instruments in all types, sizes and ranges required for switchboard and panel needs . . . including d-c, a-c power frequencies and radio frequency, rectifier types and DB meters.



Industrial Circuit Tester—Model 785—a multi-range, multi-purpose, ultra-sensitive analyzer, for laboratory and industrial checking of electrical and electronic circuits. Has 28 practical scale ranges; measures d-c and a-c voltage, d-c and a-c current, and resistance. Accessories available to extend ranges. Compact and portable; furnished in either oak or steel case.

Clamp Volt Ammeters—(Model 633, Type VA-1) for convenient and rapid measurement of a-c voltage and current without breaking the circuit. Jaws take insulated or non-insulated conductors up to 2" diameter. Safe, rugged, versatile. Also available as a-c clamp ammeter, without voltage ranges.

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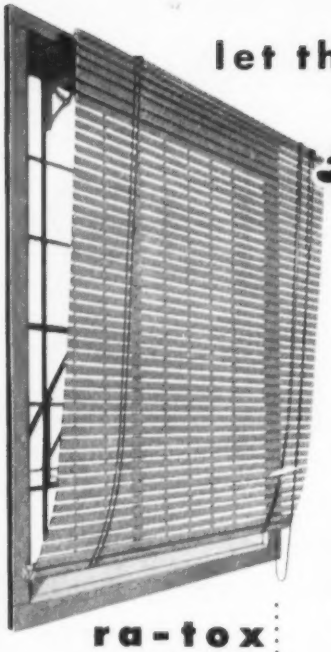
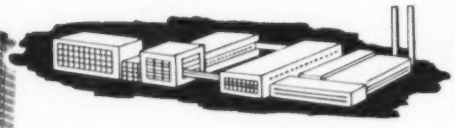


let the *right* light in



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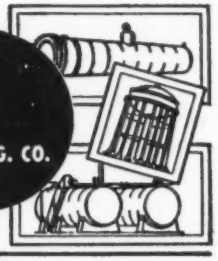


Mill Maintenance

Check Your Lighting System To Insure Efficiency

When a job can be seen clearly, easily, and comfortably over the entire workday, then, and only then, can it really be done well.

How much energy is actually wasted when you attempt to work in a badly lighted area is illustrated by this example:

Suppose you drive an automobile on a bright, sunny day over a 50-mile stretch of straight road without heavy traffic. At the end of the ride you notice no particular exhaustion.

But take the same automobile, the same road, and make the same drive at night in a fog. After 50 miles, you know you have done some work. You have gripped the steering wheel, tensed your muscles, strained your whole body, and used up a great amount of energy trying to see. The only actual difference between the two cases has been the amount of light available for seeing.

Seeing conditions affect employee efficiency and morale. The benefits resulting from good seeing and lighting conditions are:

1. You can see faster and do more accurate work.

2. Seeing is easier, and eyestrain and fatigue are minimized.

3. Labor conditions are improved, the use of all floor space is encouraged, and cleanliness and safety are promoted.

Good seeing and good lighting conditions include the following:

1. There should be enough light, and it should be suitably distributed on the surface to be seen.

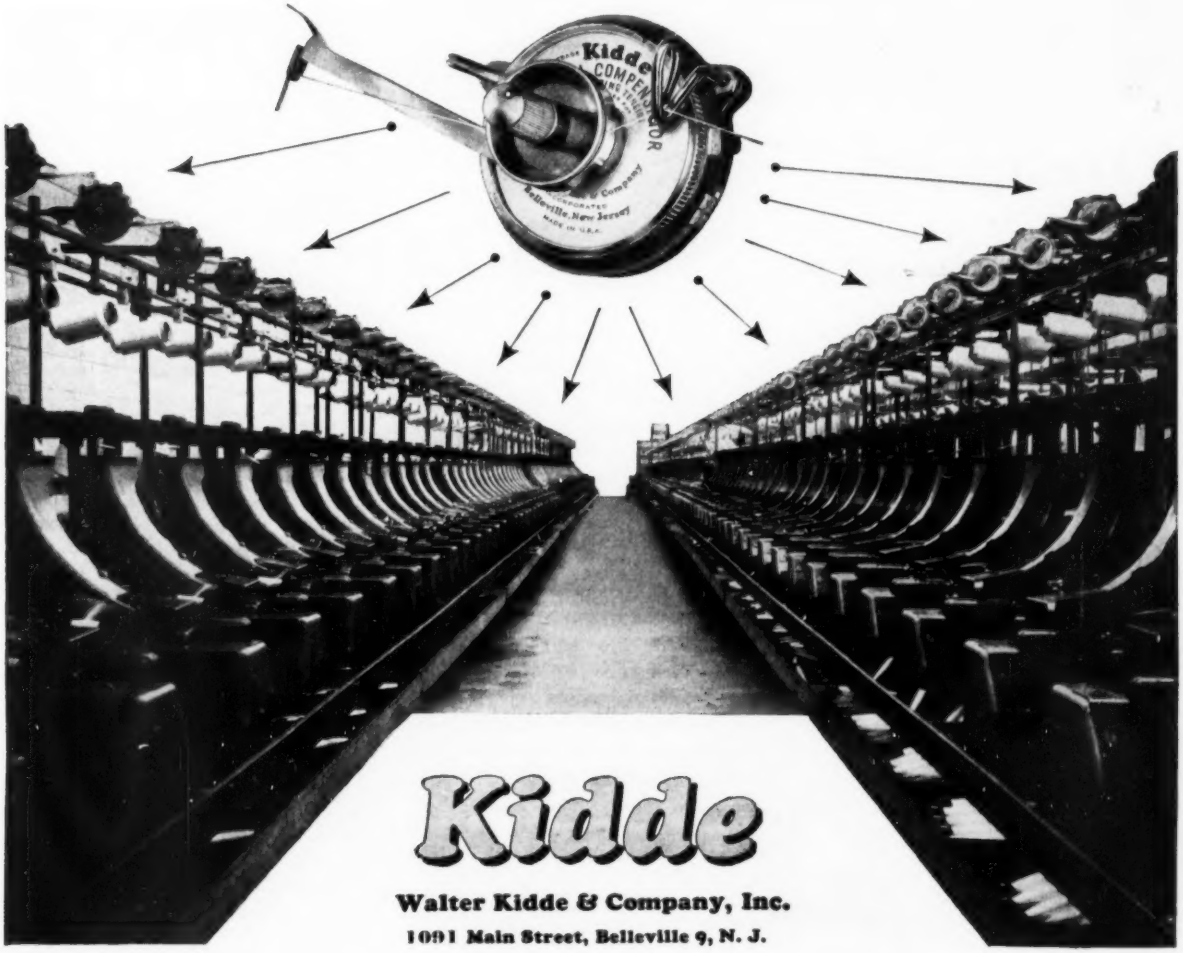
2. There should be no glare to cause discomfort to the eye and affect its ability to see.

3. Any shadows should be agreeable, revealing rather than hiding. We depend upon shades and shadows to show forms of solids. Any shadow that does not reduce the illumination more than 20% will hardly be noticeable. A shadow that causes more than a 50% reduction is bad practice.

4. The surrounding area should be uniformly bright, equal to or less but never more than the central-area

How Quill Winders are Tension Controlled at the Schneider Mill

Over 500 leading textile mills depend on Kidde Compensators to take the guesswork out of tension control. Kidde Compensators are precision instruments made of the most modern non-corrosive materials. They're a cinch to set, and automatically compensate for a change in the coefficient of friction as well as back drag. If you use quill winders on any kind of synthetic yarn, count on Kidde Compensators to (1) assure uniform tension throughout the quill; (2) control tension at bunch; (3) prevent sloughing off due to soft quills; (4) relieve yarn tension at *start* of bunch, thereby promoting longer quill life. Write today for full information.



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- Individually heated units . . . you heat only the machine to be used.
- No boilers to fire. No pressure to build up. You get the heat you want FAST!

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By working closely with people in the Textile Industry, The COLSON Corporation has developed a series of wheels, casters and trucks which will fit your *exact* needs. COLSON wheels and casters roll easily over all types of floors. They swivel freely and are rust resistant. Many models have thread guards. Write us *now* or consult the yellow pages of your 'phone book for the name of the COLSON office near you.

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brightness. Always have more light on the work than at the eye.

5. The central and surrounding visual area should be colored to give a pleasing sense of variety and at the same time hold the brightness levels within reasonable limits, 10:1.

6. The color of the light should be suited to the object illuminated by it. Be critical about colors of interiors. When color judgment is an important consideration, do not permit personal preferences to dictate selection.

7. The lighting installation should be as inconspicuous as possible or designed to contribute materially to the attractiveness of the environment.

8. The lighting installation should be as comfortable, efficient, economical, easy to maintain, and flexible as conditions permit.

9. Comfortable lighting is always important. Disturbing reflecting brightness from machines and processes are often encountered even though the product itself may have a dull finish. **Plant Engineering Handbook, McGraw-Hill Book Co.**

Useful Accessories For Textile Mills

► To request further information on any item, please use the card in the Reader-Service dept.; refer to the number at the end of the item concerned.

Cellophane for Packaging

A heavy cellophane for prepackaging textile products such as sheets has been developed by Sylvania Div., American Viscose Corp., 350 Fifth Ave., New York, N. Y. The cellophane is said to be the strongest cellophane ever made and is said to take printing easily and brilliantly. (U-1)

Thermocouple Tube

A stainless-steel tube to protect thermocouples that has a ⅛-in. dia. and a .035-in. wall has been announced by Conax Corp., Buffalo 27, N. Y. The tube eliminates junction boxes, prevents leakage of gases or liquids, and holds the thermocouple in place. (U-2)

Temperature-Control Switch

A temperature-control switch for operating snap-action contacts has been de-

For a Firmer, Crisper, Fuller Hand on Rayons, Cottons and Synthetics

AEROTEX* SYRUP 250 CONC. adds qualities to fabrics that make them look and perform better—and make them sell better, too!

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Synthetic suitings and spun rayon fabrics treated with AEROTEX SYRUP 250 CONC. take on added body and fullness.

AEROTEX SYRUP 250 CONC. imparts a crisp, firm, linen-like hand, adding to the fabric's freshly pressed appearance, providing that extra snap identified with good crease resistance.

Cotton draperies treated for spot resistance along with AEROTEX SYRUP 250 CONC. stay clean longer and retain their new look through repeated cleanings.

AEROTEX SYRUP 250 CONC. is compatible with melamine and urea resins, with starches, gums and softeners. Used alone or in combination with other resins it provides a durable, highly uniform finish, stable in bath and simple to apply.

Because of its high degree of concentration, AEROTEX SYRUP 250 CONC. gives greater economy—less handling and storage expense.

*Trade-Mark of American Cyanamid Company

Textile Finishing Bulletin #127 describes fully the application of AEROTEX SYRUP 250 CONC. We will be glad to send you a copy.

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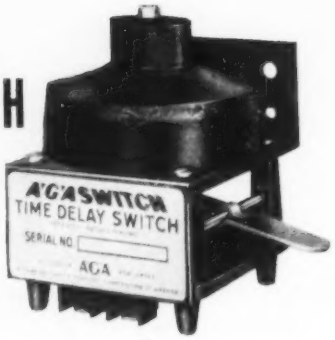

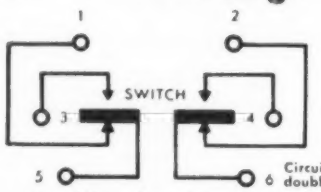

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- Only 3½" x 2½" x 2½" overall
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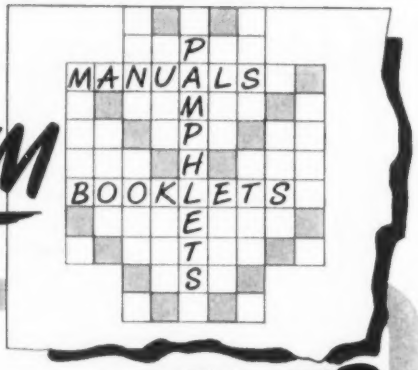

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veloped by Smith Control & Instrument Co., Inc., Market St., Palmyra, N. J. The 2½x1-in. switch has a switching differential of 4° F. (U-3)

Stainless-Steel Pump

A stainless-steel, corrosion-resistant pump in capacities from ¼ to 20 gals. per min. and discharge pressures from 0 to 60 psi.-ga. has been announced by Vanton Pump Corp., 350 Fifth Ave., New York, N. Y. The flexible liner can be furnished in a wide range of materials, including rubber, neoprene, and vinyl plastic. (U-4)

Low-Speed-Control Switch

A low-speed-control switch that can operate signal circuits at accelerating speeds of 15 rpm. and decelerating speeds of 8 rpm. has been developed by Winterburn Mfg. Co., Putnam, Conn. Maximum speed of the switch is 5,000 rpm. (U-5)

Hoists and More Hoists

Fifty-five different models and sizes of hoists have been added to the line of hoists manufactured by Coffing Hoist Co., Danville, Ill. These hoists include single-chain hoists in ¼- to 2-ton capacities, multiple-chain hoists in 3- to 25-ton capacities, and trolley hoists in ½- to 10-ton capacities. (U-6)

Flexible Coupling

A flexible coupling with cast-iron flanges and neoprene or leather intermediate disks is available from T. B. Wood's Sons Co., Chambersburg, Pa. The completely split interchangeable hubs are said to cut down installation and maintenance time. Sizes: No. 4 to No. 10. (U-7)

Small Gas-Fired Heaters

Seven sizes of gas-fired heaters ranging from 20,000 to 160,000 Btus. per hr. are available from American Air Filter Co., Inc., 215 Central Ave., Louisville 8, Ky. The heaters are recommended for small offices and rooms where a central-heating system is not available. (U-8)

Sectional Storage Huts

Metal huts that are produced in sections and can be used for the outdoor storage of machinery have been developed by Yard-Stor Shelter Co., 19,256 John R, Detroit 3, Mich. The sections tilt from either side, slide apart, and nest together. (U-9)

Chemical To Remove Ice

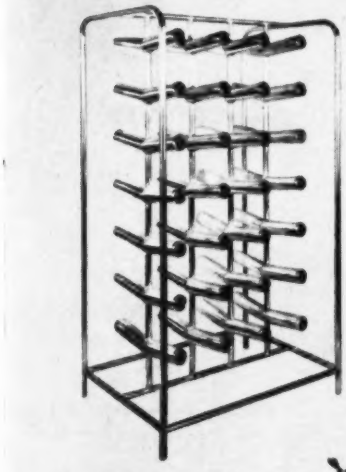
With winter coming on, you might be interested in an ice-removing chemical available from The Monroe Co., Inc., 10,703 Quebec Ave., Cleveland 6, Ohio. The ice remover, known as X-73, is just sprinkled lightly over the icy surfaces of steps, walks, parking lots, etc.; it contains a rust inhibitor to protect automobiles, drains, and machinery. (U-10)

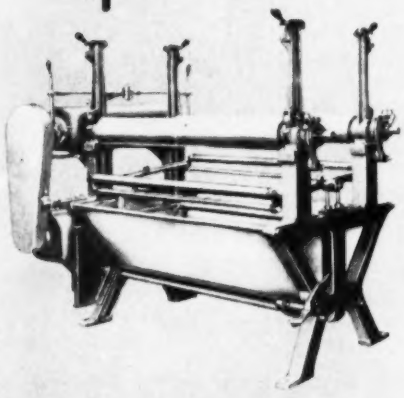
Small Trailer for Heavy Loads

A tractor trailer for hauling heavy, high-center-of-gravity loads has been developed by Mercury Mfg. Co., 4044 S. Halsted St., Chicago 9, Ill. The trailer is 2 ft.

STEP UP . . . . . quality – production and profits

STEP DOWN . . lost time – materials





More and more, manufacturers of machines for the textile industry are selecting Carpenter stainless tubing for parts.

That's because they have found that Carpenter stainless gives textile men extra advantages. It is light, permits top-speed machine operation. It is strong, stands up to years of service and mishandling. It is super-smooth, won't snag even fine nylon monofilaments. It is corrosion resistant, rust-proof, can't stain or spoil fabrics. It is pit-free, easy to clean and keep clean.

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When next you need stainless tubing, call Carpenter. We'll give you prompt action delivery, and be glad to give you any engineering or design assistance you may want.

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high, 3 ft. wide, and 8 ft. long, and it has a capacity of 8,000 lbs. The wheels have solid rubber tires and are mounted on roller bearings. (U-11)

Narrow-Band Controller

A new electronic potentiometer for pneumatic control of processes with a small time lag has been announced by Minneapolis-Honeywell Regulator Co., Industrial Div., Wayne and Windrim Aves., Philadelphia 44, Pa. The narrow-band instruments use circular charts and have an automatic reset action. (U-12)

Welding Electrode

An electrode that is recommended for joining light sections of low- and medium-alloy steel and stainless-steel types 301, 302, 320B, and 303 has been announced by Eutectic Welding Alloys Corp., Flushing, N. Y. One application is the rebuilding of worn alloy-steel shafting. (U-13)

Dust-Pickup Attachment

A vacuum attachment for Multi-Clean floor-maintenance machines that picks up dust while the machine is sanding is available from Multi-Clean Products, Inc., St. Paul, Minn. The 1-hp. attachment can be clamped to the handle of the machine in 10 mins. (U-14)

Wire Coil Holder

A coil holder for holding the wire supply on its line of wire-stitching machines has been announced by Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill. The holder mounts on the machine and holds two 50-lb. coils of wire. The holder itself weighs 25 lbs. (U-15)

Precision Colorimeter

A redesigned colorimeter called the Color-Eye has been announced by Instrument Development Laboratories, 163 Highland Ave., Needham, Mass. The instrument computes logarithmically to simulate the response of the eye and brain in the comparison and measurement of colors. Measurement is possible under daylight or artificial light. (U-16)

All-Aluminum Control Center

An all-aluminum instrument-control center for plants with a corrosive atmosphere has been developed by Westinghouse Electric Corp., 401 Liberty Ave., Pittsburgh 30, Pa. In addition to the corrosion resistance, the control center features economical use of space, economy of installation, reduction of work hazards, and efficient control supervision. (U-17)

Pocket Pyrometer

A pocket pyrometer that uses interchangeable thermocouples to measure surface and subsurface temperatures has been announced by Cybertronic Corp. of America, 136 8th St., Upland, Chester, Pa. The pyrometer is available in five standard ranges. (U-18)

Industrial Rubber Hose

An all-purpose rubber hose reinforced with braided rayon cord has been an-

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Viscose Yarns
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Package Dyed
Viscose Yarns
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All are here at Atlantic. You can send us your yarn on skeins, cones or cakes—Fast or commercial colors—All shades—Lights, mediums, darks.

Jobbers of Natural Acetate & Rayon Yarns

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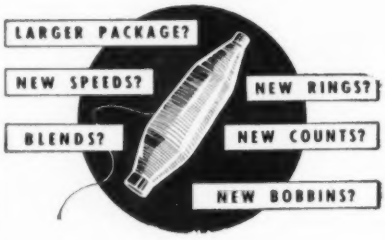
U. S. RING TRAVELERS

What YARN changes are you making?



What TRAVELER changes will they require?

Wherever you feel a change in travelers would benefit let U. S. men make suggestions and furnish test samples.

Prompt shipments from stock at Greenville, Providence

"A Style and Size for Every Textile Fibre!"

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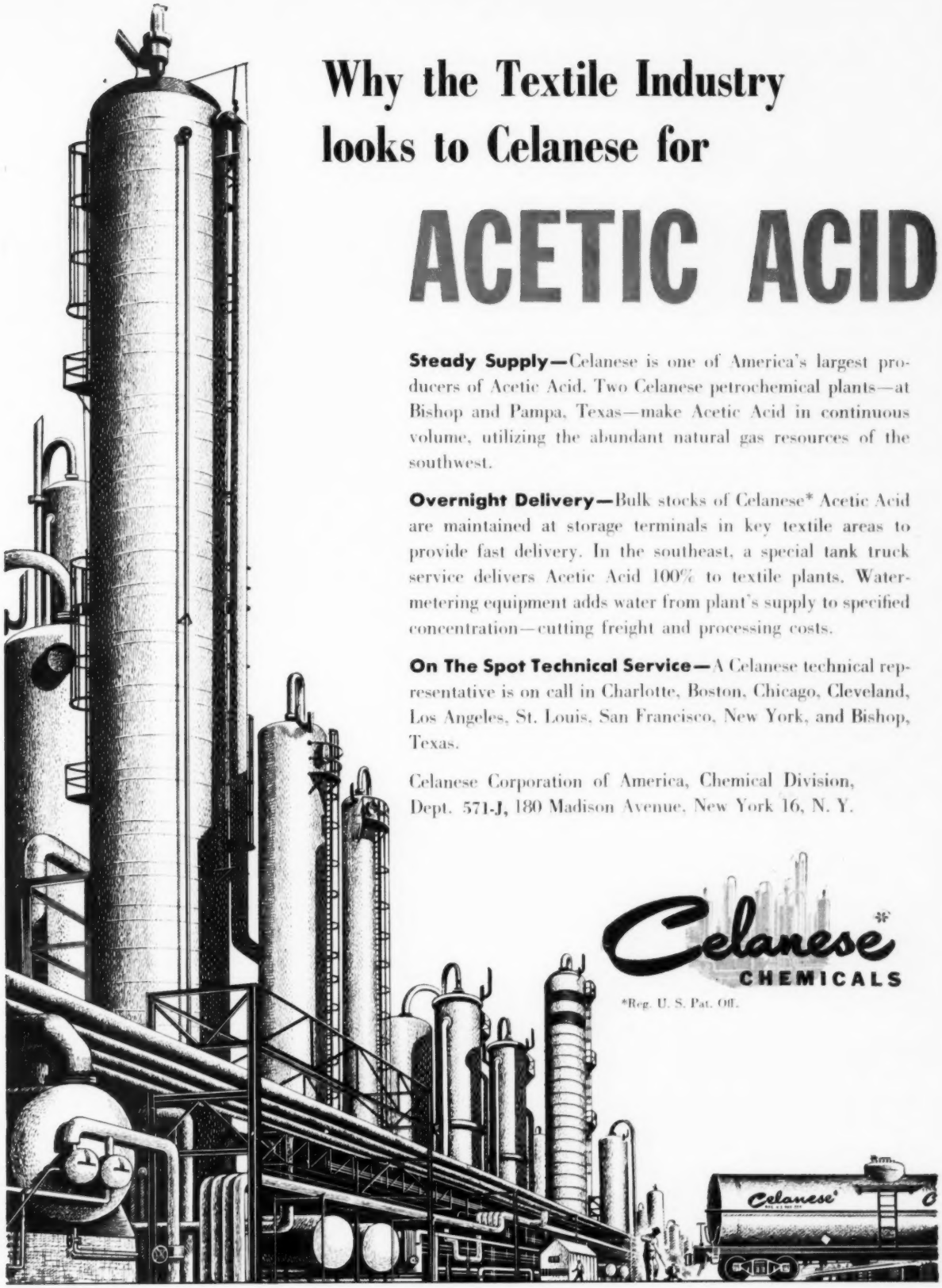

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Steady Supply—Celanese is one of America's largest producers of Acetic Acid. Two Celanese petrochemical plants—at Bishop and Pampa, Texas—make Acetic Acid in continuous volume, utilizing the abundant natural gas resources of the southwest.

Overnight Delivery—Bulk stocks of Celanese* Acetic Acid are maintained at storage terminals in key textile areas to provide fast delivery. In the southeast, a special tank truck service delivers Acetic Acid 100% to textile plants. Water-metering equipment adds water from plant's supply to specified concentration—cutting freight and processing costs.

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Celanese Corporation of America, Chemical Division,
Dept. 571-J, 180 Madison Avenue, New York 16, N. Y.

Celanese®
CHEMICALS

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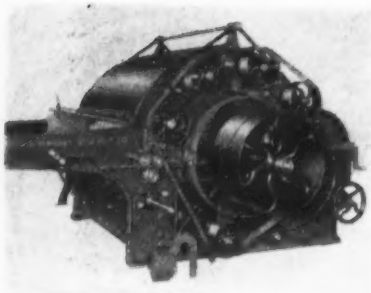


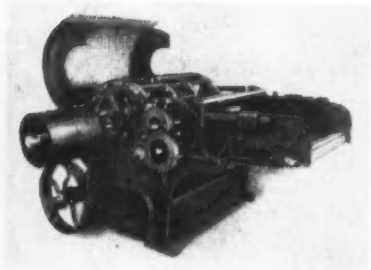
Fearnaught Mixing Picker

For Opening, Mixing, and Preparing Wool, Cotton, Shoddy, Hair, Asbestos, Jute, and Tow

Does not break the fibre even of long-stapled wools.

Large capacity, unequaled for making a superior mix. Grate racks underneath cylinder can be dropped for convenience in cleaning.

Send for Bulletin 222B



Atlas Mixing Picker

With 12 Bars of Teeth and Two Pairs of Feed Rolls

Flat, hardened steel teeth, are dovetailed into the bars so that it is impossible for them to get loose or fly out. This method eliminates the use of set screws, which collect stock. Teeth of this type can easily be renewed at small expense when necessary.

Send for Bulletin 191B

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS, U. S. A.

announced by Hamilton Rubber Mfg. Corp., Trenton, N. J. The Vari-Purpose hose is said to withstand the deteriorating action of oil, grease, gas, weak inorganic acids and alkalis, and acetylene. Sizes: ¼-in. to 1½-in. dia. Working pressures: 125 lbs. to 300 lbs. Available in one, two, or three braid constructions. Samples on request. (U-19)

Jet Cleaner

A jet cleaner that generates its own steam and provides a jet of superheated water and detergent for removing grease deposits and encrustations has been introduced by Livingstone Engineering Co., 100 Grove St., Worcester 5, Mass. Steam is generated by an electric generator. (U-20)

Button-Head Socket Screws

Button-head socket screws are now being made by The Allen Mfg. Co., Hartford, Conn. The Allen button-head socket screws have rounded tops and flush edges and are said to eliminate the hazard of catching on clothing. (U-21)

Electrical Insulation

Improved insulation tubing and sleeving for electrical equipment has been introduced by Bentley, Harris Mfg. Co., Conshohocken, Pa. The insulation is coated with a silicone-rubber compound and is not affected by temperatures from −90° F. to 400° F. (U-22)

New Control Thermometer

A new indicating pneumatic control thermometer has been introduced by the Industrial Div. of Minneapolis-Honeywell Regulator Co., Wayne and Windrim Ave., Philadelphia 44, Pa. The thermometer is actuated by standard vapor- or mercury-filled thermal systems, and it is available with direct- or reverse-acting on-off or limited-throttle controls. (U-23)

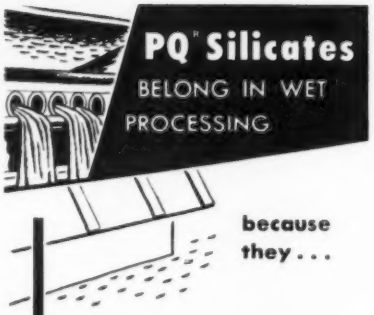
Pressurized Boiler

A new pressurized boiler-burner unit has been developed for high- or low-pressure heating, power, and process steam. The boiler was developed by Titusville Iron Works Co., Titusville, Pa., and the burner was developed by Iron Fireman Mfg. Co., 3170 W. 106th St., Cleveland 11, Ohio; but the unit is sold and serviced as a packaged plant. The unit operates on oil, gas, or an oil-and-gas combination. (U-24)

Truck for Semi-Live Skids

A rider-type truck for hauling semi-live skids has been added to its line of narrow-aisle electric trucks by Raymond Corp., Greene, N. Y. The truck handles loads up to 4,000 lbs. (U-25)

Get that SCRAP Back to WORK



because they . . .

1. Increase detergent action.
2. Prevent redeposit of removed soil.
3. Work efficiently with phosphates, synthetic detergents, soaps, sodium perborate, peroxide.
4. Control pH at safe level.
5. Are economically priced as basic chemicals.

Write for suggestions for use in your formulas.

PQ Silicates—sodium silicates, metasilicate, sesquisilicate, orthosilicate.

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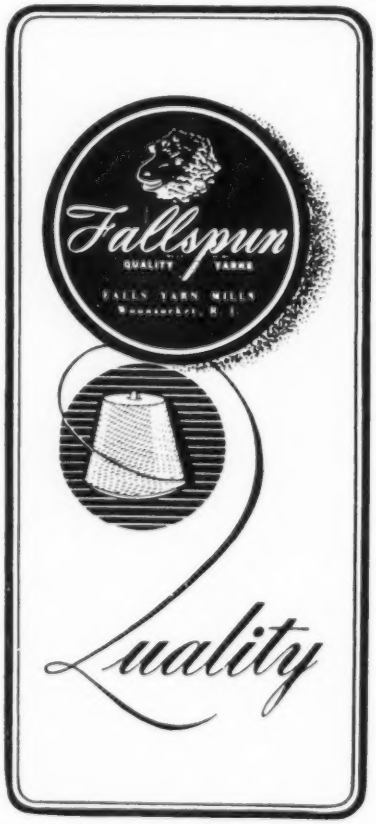
1139 Public Ledger Building
Philadelphia 6, Pa.

PQ® Soluble Silicates
METSO® DETERGENTS



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are made by

DUFFY SILK with the assistance

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HERR FLYERS

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CONICAL RINGS

To Obtain Results Like This!

You can easily adapt your present equipment for any textile fiber or blend with HERR Conical Rings. They prevent yarn breakage, give smoother, cleaner yarn, and permit heavier, more uniform doffs. You will have fewer ends down because these rings compensate for and equalize yarn tension variations. No rewicking required.

Specially designed lightweight HERR flyers that are perfectly balanced for accurate yarn control and minimum tension were instrumental in producing this special Helanca yarn in the Duffy Silk Company mill in Buffalo, N. Y.

Do what so many other quality-conscious mills have done — see how HERR equipment increases efficiency — and profits.

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PA.

Textile Equipment News

(Continued on page 160)

Can You Think of a Use For This Canvas Cart?

THIS FOLD-A-WAY CART was designed to haul leaves, but it obviously can be used for materials handling. The cart is said to be lightweight, sturdy, and maneuverable; and the canvas can be removed from the frame and folded for storage. Two sizes are available: 15 bushel and 5 bushel. The manufacturer is Parker Sweeper Co., 55 Bechtle Ave., Springfield 99, Ohio.

Circle T-19 on Reader Service Card

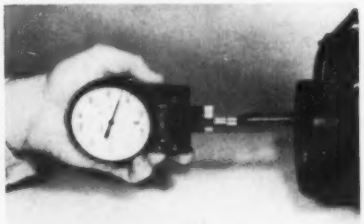
Cloth-Inspection Machine Stops Within 2 Ins.

A new cloth-inspection machine that stops within 2 ins. has been introduced by G. Durrant and Sons Ltd., Stockport, England. The usual speed range is from 10 to 35 yds. per min., but the gears are infinitely variable.

A constant cloth speed is maintained across the table, and the tension can be varied to each roll by a handwheel adjustment. A quick-release arbor prevents damage to the ends of the cardboard tubes. Fluorescent tubes under the inspection window provide indirect lighting; for dark fabrics, a white plastic cover can be supplied. All controls are conveniently located at the right-hand side.

Circle T-20 on Reader Service Card

Portable Tachometer



CHECKING REVOLUTIONS PER MINUTE is easy with this portable tachometer, which gives a direct reading of the speed of motors, machinery, and shafts. Just press the rubber tip against the revolving shaft and read the revolutions per minute on the dial. Range: 40 to 50,000 rpm. Price: $75. Montgomery & Co., Inc., 53 Park Place, New York 7, N. Y.

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tough babies

"Fedco" FIBRE BOX TRUCK

Compact, husky, light yet durable! Vulcanized fibre walls; sturdy support strips; reinforced hardwood bottoms; easy-gliding rubber casters. All sizes and styles, made to the specifications of any mill or factory.

Also Mill Boxes, Barrels, Cans
Full Information on Request

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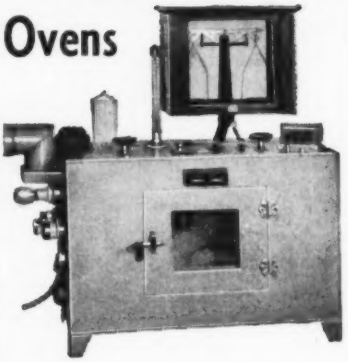
Long Island City 1. N. Y.
RAvenswood 9-2860-1

Textile Testing Ovens



For *accurate* testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼" both 6" deep. Occupies table space 20" x 40".

EMERSON Ovens

Are built in different types to handle wool, cotton and silk. Baskets are designed specially for each class of work. Write for details on EMERSON OVENS to fit your process.

EMERSON APPARATUS CO.
177 Tremont St. Melrose 76, Mass.

4667

"What's in a name?

That which we call a rose
By any other name would smell as sweet."
— Shakespeare

And we heartily agree. For although we have changed the name of our Sodium-Oleyl-Methyl-Tauride product, it's just as versatile as ever for processing textile fibers. ONLY THE NAME HAS BEEN CHANGED!

Selapon Gel Is Now **Sellogen Gel**

Our SELLOGEN GEL formulation is *still* the powerful detergent it always was; *still* doesn't precipitate in the presence of metal salts; *still* is unaffected by bleaching powders, peroxide, and hypochlorite; *still* is an effective wetting-out agent for natural and synthetic fibers; *still* is first rate for bleaching, finishing, and acid milling.

So from now on—when ordering, or for information and samples—please specify SELLOGEN GEL.

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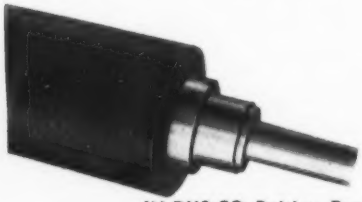
Chemicals PASSAIC, N.J.

Plants in: Clifton, N.J., Carlstadt, N.J., Los Angeles, Calif.

At no extra cost over wood core brushes . . . *you can have*

METAL CORE
NYLON BRISTLE

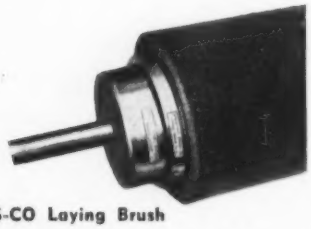
IN-DUS-CO
RAISING, FLOCK
and
LAYING BRUSHES



IN-DUS-CO Raising Brush

By our "Fineset" or tufted metal-wound method of setting bristle firmly in plastic in a metal core, IN-DUS-CO Raising, Flock and Laying Brushes match the first cost of wood core brushes.

- The bristle is wide set with an open surface between the spiral rows of bristle for easy cleaning.
- Lint and dirt find no lodgement at the base of the bristle.



IN-DUS-CO Laying Brush

IN-DUS-CO Raising Brushes raise all threads on cotton, rayon, and woolen fabrics—made for all types of shears.

IN-DUS-CO Flock Brushes remove all cut threads from the surfaces of wool and worsted fabrics—made for all types of shears machines.

IN-DUS-CO Laying Brushes give cloth the perfectly smooth laid surfaces required for perfectly finished fabrics.

Write for complete catalog of IN-DUS-CO textile brushes.

INDUSTRIAL BRUSH CO.
Woodside Avenue
LITTLE FALLS NEW JERSEY

Questions and Answers

(*Continued from page 165*)

Here Are Some Tips On Running Card Strips

Technical Editor:

We want to card our cylinder, doffer, and flat strips on revolving-flat cards. What clothing, settings, and speeds are advisable? How about a fancy? (9684)

Here is the experience of one mill running card strips for mop yarn:

Clothing: Standard wire, 100's on cylinder, 110's on doffer, 110's on flats.

Speeds: cylinder, 172 rpm.; lickerin, 450 rpm.; doffer, 11 rpm.; flats, 1¼ ins. per min. If strips are trashy, lickerin speed can be increased to 550 rpm., flat speed to 3 ins. per min.

Settings: standard settings except cylinder to doffer (0.007 in.) and cylinder to flats (0.012 in.). Adjust front and back plates until they just give a light unbroken strip. If fly is excessive, adjust the screens.

A continuous stripper on the back of the cards greatly improves the running and often gives better results than a fancy roll on front. The stripper prevents loading of cylinders and reduces the labor of stripping. Here's a tip: make sure that the surface speed of the continuous stripper is greater than the surface speed of the cylinder.

Metallic clothing seems to be well adapted for this type of work. It should prevent loading and greatly reduce the need for stripping.

To Prevent Shell-Offs, Condition Your Filling

Technical Editor:

How can we prevent shell-offs in weaving our rayon fabrics? We have the most trouble on Monday morning with filling that was made on the previous Friday. (9533)

Shell-offs, or sloughed filling, on Monday morning is usually caused by filling that is left on the loom over the week end. The filling dries out because of a lack of moisture in the air.

The simplest way to prevent Monday-morning sloughed filling is to let the filling in the batteries or magazines run almost out before the mill is stopped for the week end. No filling should be left in storage on the loom.

This procedure will require a slack period of battery filling before the weave room is stopped and a peak work period by the batteryhand on Monday morning.

If it does not require too much

Don't be half safe — while you're at it, get complete protection. It could save you many thousands of dollars and countless hours of lost production. Plant protection is our business, so talk it over with Stewart. We produce many products designed for this purpose. For example: chain link wire and iron picket fence; wire window guards; wire mesh partitions; steel folding gates, and skylight guards. Also, all-steel settees, steel flagpoles, bronze plaques and other items. Stewart literature gives you the whole story. Write for it today.

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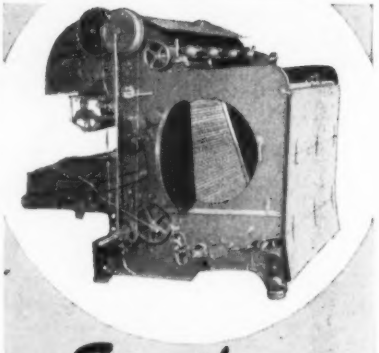

Specify Harwood Aprons
for BRAMWELL® FEEDERS

Geo. S. HARWOOD & Son
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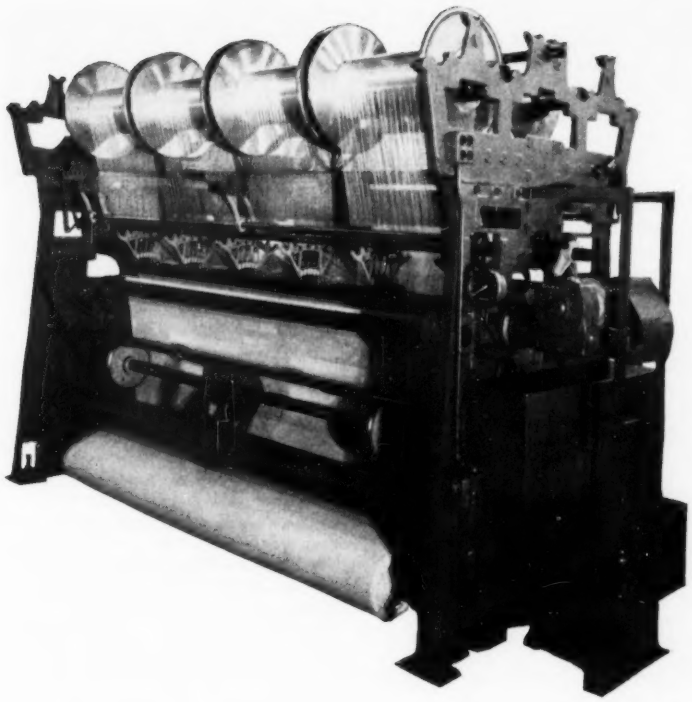
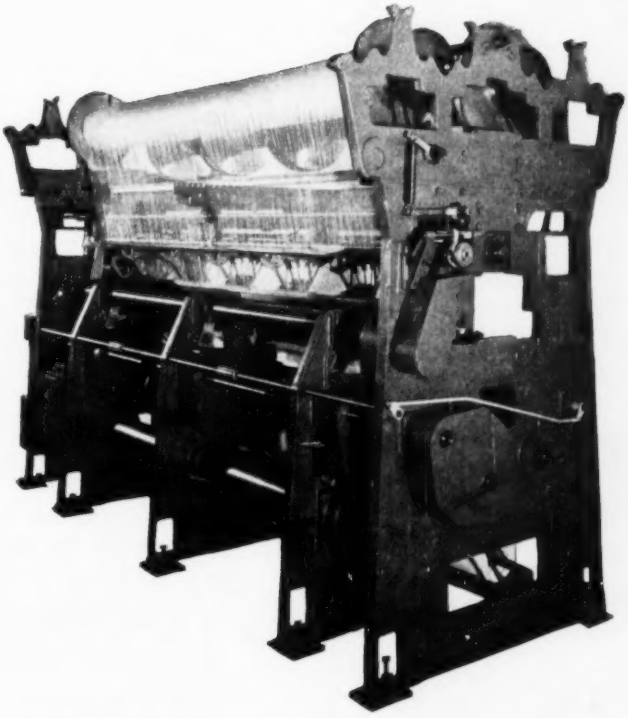


40 to 50% Faster!

NEW Model "E" KIDDE KNITTER

PRODUCTION speeds up to 500 courses with 2 guide bars... up to 400 courses with 4 guide bars can be maintained 24 hours a day with the new MODEL E KIDDE KNITTER. Consider what these new speeds will mean to your costs on elastic fabrics, tulle, shoe fabrics, etc.... what they will mean to your profits too!

A completely new machine, the MODEL E is equipped with high speed cams, totally enclosed and running in oil... double the usual number of guide bar rocker cams... pattern wheels or chain drum... quick stop... and practically non-breakable needles—all features never found in a Raschel machine before. Investigate how this machine can slash your knitting costs! Write for information.



Kidde Knitter

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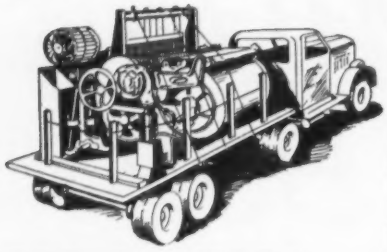
TRUCKING
TEXTILE MACHINES



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effort, the humidity in the weave room should be controlled during the week end. Since a small amount of filling may be left in the battery, the humidity will aid in keeping the filling from sloughing. The humidity will also be beneficial to conditioning the warp.

All of the filling should be steamed on Monday morning before it is placed at the disposal of the battery-hand. Steaming of most filling is desirable throughout the week.

Of course, if the picking motion of the looms is set with too much power, filling will be sloughed no matter what other precautions are taken.

Yield of Duck Depends On Equipment and Tension

Technical Editor:

Is there any relationship between the loss in width and increase in length in finishing 36-in., 14.90-oz. duck?

The duck is vat dyed, given a water-repellent and mildew-resistant finish, and finished on a tenter frame to widths varying from 34¼ to 35¼ ins.

If this finished duck were submerged in cold water for 24 hrs. and then air dried, would there be any length shrinkage? (9686)

In general, the narrower the duck fabric is finished, the better the yield. A heavy duck has very little shrinkage in it to begin with. After dyeing and finishing 36-in. gray duck, you can expect a stretch of 2.0 to 3.0% at the 35- to 35½-in. finished width. If the goods are finished down to 34½ ins., the yield would be approximately 1.0% more. These figures depend entirely on the type of equipment and the amount of tension applied in dyeing and finishing.

If the water-repellant treatment is properly applied, there would be no radical dimensional change in the fabric after an immersion in cold water for 24 hrs. and air drying. However, if the finisher stretches the goods too much, a small amount of warp shrinkage can be expected.

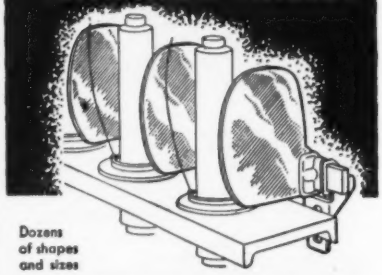
Is Direction of Twist Important in Knitting?

Technical Editor:

Should two-ply yarn be twisted to run on a knitting machine in the same direction that it was run on the spinning and twisting frames? (9560)

No actual data has been recorded on the direction of twist as it is applied to knitting. No consideration is given to the direction of the feed in spin-

Permalite ALUMINUM ALLOY
SEPARATOR SHIELDS



Dozens of shapes and sizes

BETTER YARN AT LESS COST

- Fewer ends down—some mills report 27% less
- Use two numbers lighter travelers for higher-strength yarn
- Polished aluminum blades stronger than steel—much lighter—cost less
- Non-slotted blades mean less wear on yarn, less lint, fewer slubs
- 7,000,000 in use by more than 400 mills

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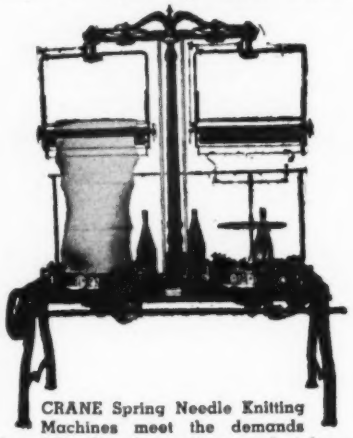
KNITTING MACHINES
Speed - Quality - Low Cost



CRANE Spring Needle Knitting Machines meet the demands of rapidly changing patterns and styles on all weights of fabrics.

CRANE
MANUFACTURING CO.
LAKEPORT, N. H.

WHATEVER THE PUMPING JOB WHEN YOU SPECIFY "Buffalo" YOU'RE SPECIFYING SATISFACTION

(photo courtesy Washington Sunday Star)

**Above, the 25' fountain produced by the No. 2 "Buffalo" SL Double Suction Pump bottom right, in Flower and Garden Show, National Guard Armory, Washington, D. C. Installation by Standard Engineering Company, Washington, D. C.*

Bottom left, SL Pumps handling chilled water in a large air conditioning installation.

It isn't every day that a "Buffalo" Pump is called on to create a 25-foot fountain for a Flower and Garden Show—in fact, probably 99.99% of our pumps feed boilers, handle paper stocks or pump clear water in every conceivable commercial or industrial application.

The point is, they do those jobs well, as users can tell you.

In the "Buffalo" line, you'll find:

(1) *The RIGHT pump.* The line includes acid, rubber-lined, alloy, double-suction, single-suction, multistage, close-coupled, diagonally or horizontally split-shell, for almost any conditions.

(2) *Efficiency—long life.* Impellers are husky, efficient enclosed type, and liquid passages are formed for least resistance.

(3) *Easy maintenance.* All parts are readily accessible, including impellers, stuffing boxes and bearings.

To be doubly sure that each "Buffalo" Pump will perform up to specification on the job, it must pass a load test before shipment, duplicating the actual hydraulic conditions of the job for which it is intended.

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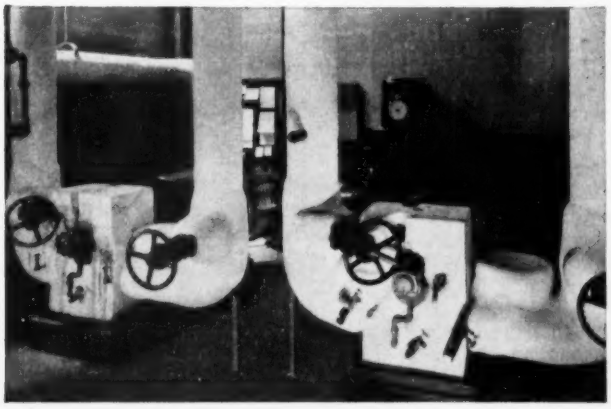

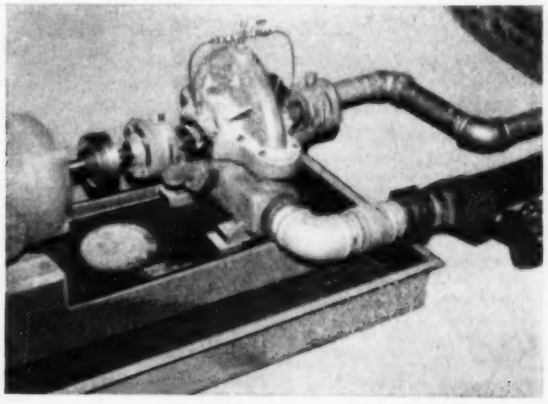

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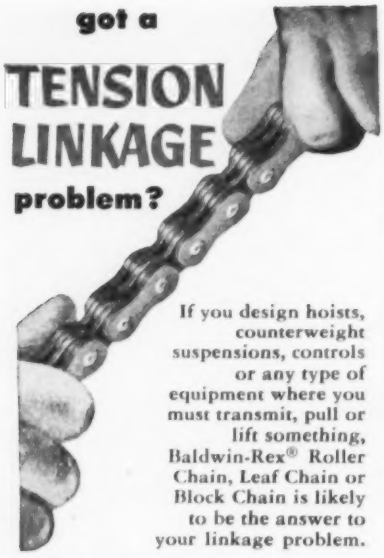
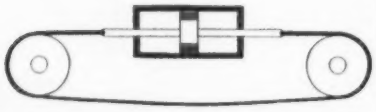


If you design hoists, counterweight suspensions, controls or any type of equipment where you must transmit, pull or lift something, Baldwin-Rex® Roller Chain, Leaf Chain or Block Chain is likely to be the answer to your linkage problem.

here's a good example:

Transmission from a double-acting hydraulic cylinder to a shaft. Since motion must be transmitted in two directions, an idler sprocket is required as shown in the illustration. Since operation may be practically continuous, and shock effects are probable, *chain* is the answer. When this type of installation is applied to rudder control, shock and fatigue considerations are especially important.



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ning, doubling, winding, or twisting.

The reversal of the running direction of a yarn in successive drafting operations will result in a round, smooth yarn. This method is sometimes used by starting with Z twist on slubbers, followed by S twist on the next process and continuing in this way throughout the last drafting process.

There is a lack of information on this subject; and if tests were made, more even yarn might be manufactured.

Wrap Broken Crepe Ends To Prevent Uneven Twist

Technical Editor:

How is uneven twist prevented when an end breaks during crepe twisting? (9651)

The only sure way to prevent uneven twist in an end when it breaks is to wrap the end up when it breaks, rather than try to tie a knot. If a knot is tied, it is practically impossible to get uniform distribution of twist at the knot. If insufficient twist is present, the yarn next to the knot is brighter in luster and will appear as a shiner in the fabric. But if the end is wrapped up until after twist setting, the knot can be tied at the doubling operation without any difficulty.

Angora and Wool Knitwear Require Care in Finishing

Technical Editor:

We have been processing headwear items composed of 50% rabbit hair and 50% wool by washing and tumbling them in a dryer. We are disappointed with our results. Can you suggest a method to retain the fluffy effect of the hair? (9649)

As there are many qualities of angora, it is difficult to give one set of rules that will cover all types. Long hair gives a better cover than short hair, but it is more expensive.

The key points to watch are:

1. Avoid felting
2. Knit loose so that the hair will have a chance to come up

A method that gives excellent results is to dampen the goods with a fine spray and put the goods in a domestic home-type dryer for 30 mins. In this way felting can be avoided, but care must still be taken.

Acetate, Glass and Asbestos Are Used To Cover Wiring

Technical Editor:

What fibrous coverings are currently being used on insulated wires? (9562)

Insulated wire coverings are known

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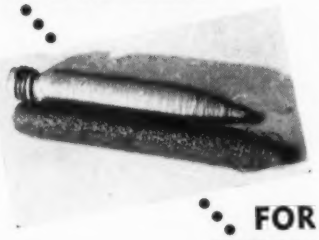

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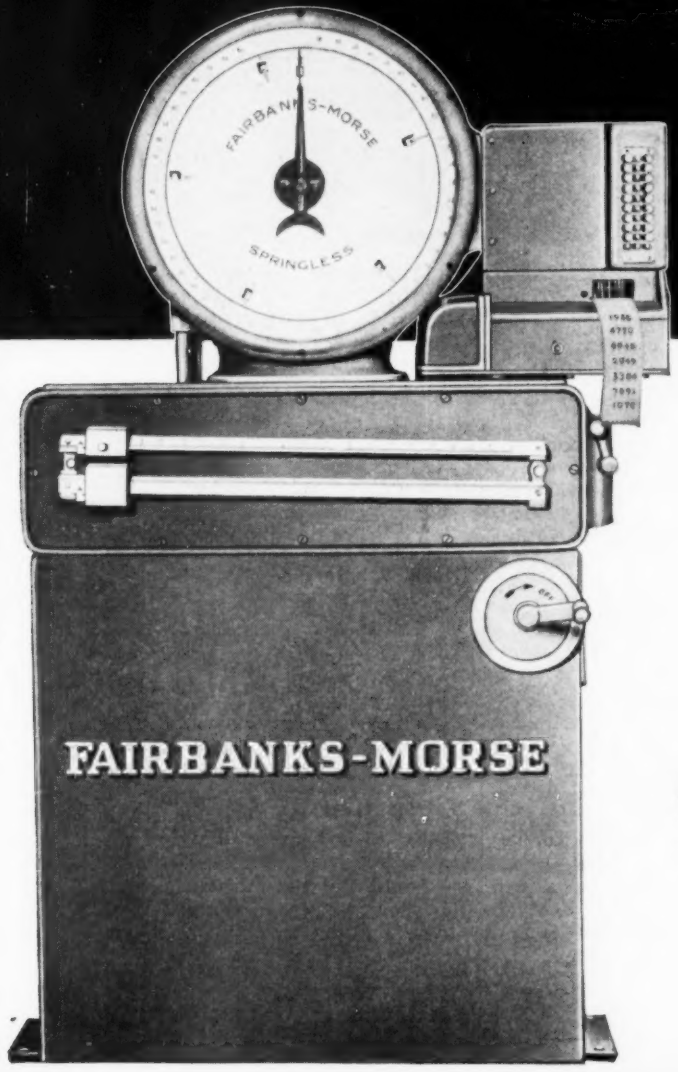

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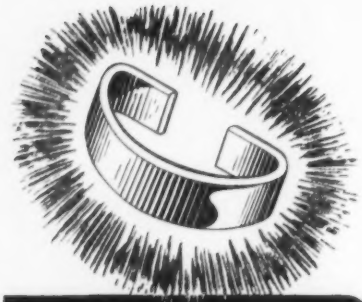

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as round braid and are made from several yarns including cotton, viscose, acetate, nylon, glass, and asbestos.

Cotton, acetate, and glass have proved to be the most satisfactory braids for insulating wires, although other fibrous coverings such as hemp, jute, silk, wool, and linen are used for specific purposes.

Cellulose acetate seems to be a better electrical insulator than cotton, regenerated cellulose, silk, or wool.

Acetate has replaced tussah silk and cotton because of its restiveness and its behavior in high humidity. Acetate also has high corrosive resistance.

Finishes are applied to filament-acetate yarn and staple-rayon yarn by the producers to lubricate the completed wiring to make it flexible and also to eliminate the generation of static electricity.

Actual Production Figures In Seaming Women's Hosiery

Technical Editor:

What is the average production in seaming full-fashioned hosiery, based on a 100% task (80 B's on a Bedeaux-type plan or 133% on a standard-hour plan)? (9545)

Here are some examples that should answer your question:

Gauge	Leg (den.)	Welt (den.)	Splicing and toe (den.)	Courses per in. in leg as knit	Production per 8 hrs. (doz.)
60	15	40	30	44	40
51	15	40	30	46	44
51	30	60	40	40	41
45	30	60	40	46	46
45	15	40	30	44	36

These are average production figures based on a normal 8-hr. day on a piece-rate basis in a large group of mills.

Extra Fancy on Woolen Card

(*Continued from page 102*)

to the last worker. We assumed that the load carried by the first worker was 100%. The load dropped gradually to about 60% on the last worker with an all-wool stock and to about 40% on wool-synthetic blends. Little change was noticed with either equal or progressive worker-cylinder settings.

In an attempt to lift this worker load and also to minimize the danger of cylinder loading, we removed the fifth worker and its stripper and replaced them with a worker covered with fancy fillet. This fancy, fitted with a 5-in. pulley and driven by the stripper belt, had a 20% lead on the surface speed of the cylinder. Settings into the cylinder varied with the type of stock carded.

Carding Power

On all-wool stock, our tests showed that the workers did 60% more work with the extra fancy in place. On a wool-synthetic blend, the workers did 43% more work. We determined the above figures by collecting stock from the workers and weighing it. We used a hand card and were very careful to lift only those fibers that were being actively carded, not those in the bed of the card clothing.

Blending

The effect of the fancy on blending was checked by feeding alternate weighings of black and white stock to the card and then checking the intermediate-feed sliver for shade variation and intimacy of blending. Without the new "worker-fancy," the sliver-color change was from black through shades of gray to white. With the worker-fancy in operation, the extremes in shade were much less pronounced—from dark to light gray—indicating that a more nearly perfect blend was being produced.

Evenness

We believe that evenness is better because blending is better. Hopper feeds are not 100% reliable, and variations in weighings do occur. If blending is better, variation in the breaker-section product must be less. We attempted to check regularity on an evenness tester but could not keep the bulky sliver between the condenser plates.

Work is now in progress on applying this extra fancy to the finisher cylinder in the hope of reducing long-term variation in yarn.

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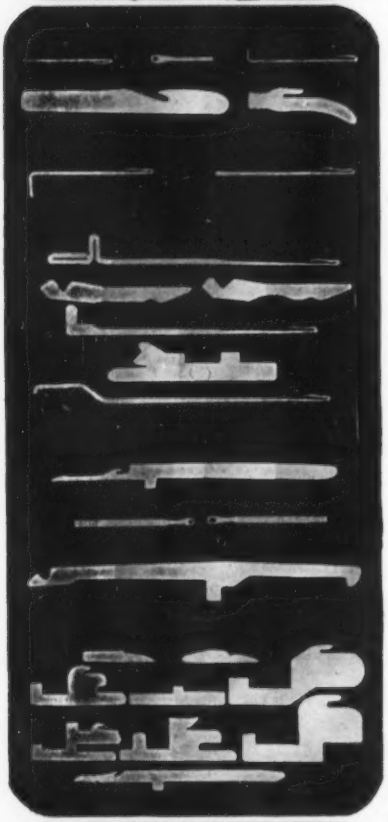

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NEW BRUNSWICK NEW JERSEY

Selecting Textile Motors

(*Continued from page 131*)

the motor should be designed so that it can occasionally stand a starting time of up to 60 secs.

Normally, with a properly designed motor, the card is accelerated in 20 to 30 secs. During the stripping operation, the card is partially accelerated several times in rapid succession and finally brought up to full speed.

For proper overload protection, a card motor should be equipped with a thermal overload to protect it against normal overload when a dangerous temperature is reached. For the starting condition, provide a thermal overload that will allow the high starting current for periods up to roughly 60 secs. This device will protect the motor against too many starts in rapid succession.

Interesting New Developments May Be Applied to Textiles

Other textile machines that present acceleration problems are woolen spoolers, high-speed dressing reels, woolen cards, woolen spinning frames, and worsted roving frames.

A centrifugal clutch between the motor and the driven shaft has been used on many textile-machine drives. The supposed advantages of this type of drive are that controlled acceleration may be obtained with standard NEMA-B motors. It is, however, difficult to obtain accurate jogging with this drive.

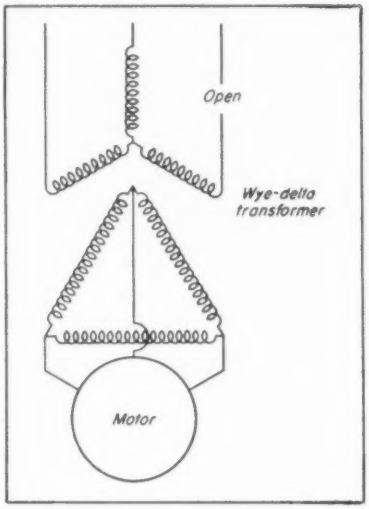
There has been much interest in the application of fluid drives to textile machines. At a glance, it appears that the break-away torque on low-inertia loads, such as roving and spinning frames, would be applied smoothly; but the rate of acceleration will be higher with a direct drive. Exact jogging would be impossible with the fluid drive.

For heavy-inertia loads, such as cards, the only advantage of a fluid drive would be a slight reduction in the force of the hammer blow when voltage is applied.

CORRECTION

The caption for the diagram at the top center of page 123 of the August issue of TW was incorrect.

The diagram, with the correct caption, is shown below.



WITH AN OPEN-PHASE FAULT in the primary of a wye-delta-connected transformer, motors will not be protected by two-element overload relays.

Cavitomic Cotton

(*Continued from page 133*)

toma, such as that for reducible material, do not readily permit testing such a large number of samples. The USDA has recently published methods for determining pH and reducible materials in cotton extracts[6, 7] and these methods can be used to identify cavitomic cotton.

Deterioration Process Continues in Storage

Inferior mill processing attributable to cavitomic cotton is usually not noted until several months after storage. In some instances, however, cavitomic cottons have been observed to lower processing levels considerably shortly after ginning. Such cottons would undoubtedly have caused even greater trouble after several months of storage.

Mill data show that cavitomic cottons, after five months of storage, cause some inferior operation. In repeated mill tests after eight months of storage, marked differences in operating levels of cavitomic and noncavitomic cottons are found.

The effects of cavitomic cotton are illustrated by the results of a typical mill test, checked by USDA spinning laboratories. Two tests were run: one before bales of cavitomic and noncavitomic cottons were stored and the other after the bales of both cottons had been stored 11 months in the same warehouse. The first test showed

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negligible differences between the two cottons. In the second test, however, the cavitomic cotton resulted in 14% lower yarn strength, 155% higher end breakage in spinning, and 25% more card waste. The lots were classed Middling 1 1/32 ins. both before and after storage and had closely comparable physical properties.

At the time of storage, the upper quartile length for the cavitomic cotton was slightly less than 1/32 in. shorter than the noncavitomic, and the mean length was slightly less than 1/16 in. shorter. After the 11 months of storage, the cavitomic cotton was a full 1/16 in. shorter in upper quartile length than the noncavitomic and nearly 1/8 in. shorter at the mean. No changes were found in the noncavitomic cotton in storage. The cavitomic cotton, both before and after storage, was more variable in fiber length than the noncavitomic.

The translation of fiber properties into cotton value and spinnability in terms of dollars is difficult, if not impossible. The cost of inferior operation and lowered quality of product caused by cavitoma is apparent to any mill man.

For further information on this subject, check these references:

1. "*Cavitomic Cotton*", Elting, J. P., *Science*, Vol. 113, No. 2933, March 16, 1951.
2. "Cavitomic Cotton—Progress Report", Hall, L. T., Elting, J. P., *Textile Research Journal*, Vol. XXI, No. 8, August, 1951.
3. "Cavitomic Cotton", Hall, L. T. and Elting, J. P., Ninth Cotton Spinner-Breeder Conference, Sept., 1952.
4. "Cavitomic Cotton," Hall, L. T., and Elting, J. P., *Textile Industries*, Vol. 117, No. 7, 1953.
5. "Determination of Non-Cellulosic Constituents of Cotton", Hopper, T. H., The Cotton Research Clinic, 1950.
6. "Determination of pH of Cotton Fiber", Pons, W. A., Jr., and Hoffpauir, C. L., *Textile Research Journal*, Vol. XXII, 1952.
7. "Cotton Minor Constituents", Hoffpauir, C. L., *Textile Industries*, Vol. 116, No. 8, 1952.

Textile Calendar

Quartermaster Assn., annual convention, Lord Baltimore Hotel, Baltimore, Md., Oct. 1 and 2.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Oct. 2.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., Oct. 3.

TOE of Georgia, Hightower Building, Atlanta, Ga., Oct. 3.

TOE of Alabama, Alabama Polytechnic Institute, Auburn, Ala., Oct. 3.

AATT, monthly meeting, Builders Club, New York, Oct. 7.

Chemical Finishing Conference, National Cotton Council, Hotel Statler, Washington, D. C., Oct. 8 and 9.

ASQC, Carolinas Sect. (successor to the Textile Quality Control Assn.), fall meeting, School of Textiles, N. C. State College, Raleigh, N. C., Oct. 9.

Packaging Institute, annual forum, Hotel Statler, New York, Oct. 12 to 14.

Textile Machinery and Accessories Exhibition, Belle Vue, Manchester, England, October 14 to 24.

North Carolina Textile Mfrs. Assn., annual meeting, Carolina Hotel, Pinehurst, N. C., Oct. 15 and 16.

STA, E. Carolina Div., Erwin Mills Auditorium, West Durham, N. C., Oct. 17.

National Safety Congress and Exposition; Conrad Hilton, Congress, Morrison, and Hamilton Hotels, Chicago, Ill.; Oct. 19 to 23.

Industrial Packaging and Materials Handling Exposition, Mechanics Building, Boston, Mass., Oct. 20 to 22.

AATCC, R. I. Sect., Providence Engineering Society, Providence, R. I., Oct. 22.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Oct. 23.

STA, Piedmont Div., Hotel Hickory, Hickory, N. C., Oct. 24.

Beltwide Cotton Mechanization Conference, Municipal Auditorium, Gadsden, Ala., Oct. 28 to 30.

AIEE, Textile Subcommittee, conference on electrical equipment, N. C. State College, Raleigh, N. C., Oct. 29 and 30.

STA, South Carolina Div., Textile School, Clemson College, S. C., Oct. 31.

AATT, monthly meeting, Builders Club, New York, Nov. 4.

ASQC, Textile Div., Chattanooga, Tenn., Nov. 5 to 7.

AATCC, Northern New England Sect., UTI, Lowell, Mass., Nov. 6.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Nov. 6.

AATCC, Mid-West Sect., Hotel Bismarck, Chicago, Ill., Nov. 7.

Refrigeration and Air Conditioning Exposition, Public Auditorium, Cleveland, Ohio, Nov. 9 to 12.

Training Course in Statistical Textile-Quality Control, Georgia Institute of Technology, Atlanta, Ga., Nov. 11 to 19.

TRI, annual meeting, Commodore Hotel, New York, Nov. 12 and 13.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., Nov. 20.

Exposition of Chemical Industries, Commercial Museum and Convention Hall, Philadelphia, Pa., Nov. 30 to Dec. 5.

ASME, national meeting, New York, Dec. 1 to 3.

AATT, monthly meeting, Builders Club, New York, Dec. 2.

AATCC, Northern New England Sect., Faculty House, MIT, Cambridge, Mass., Dec. 4.

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Dec. 4.

AATCC, R. I. Sect., annual meeting, Sheraton-Biltmore Hotel, Providence, R. I., Dec. 4.

AATCC, South Central Sect., Patten Hotel, Chattanooga, Tenn., Dec. 5.

AATCC, Western New England Sect., Rapp's Restaurant, Shelton, Conn., Dec. 11.

1954

AATCC, Phila. Sect., Kugler's Restaurant, Philadelphia, Pa., Jan. 15, 1954.

Plant Maintenance Conference and Exposition, Chicago, Ill., Jan. 25 to 28, 1954.

AATCC, New York Sect., Hotel Statler, New York, Jan. 29, 1954.

ASQC, Textile Div., technical meeting, School of Textiles, N. C. State College, Raleigh, N. C., Feb. 4 to 6, 1954.

Phi Psi, 51st annual convention, The Carolina, Pinehurst, N. C., Feb. 25 to 27, 1954.

AATCC, New York Sect., Hotel Statler, New York, Feb. 26, 1954.

ACMI, annual meeting, Jung Hotel, New Orleans, La., April 22 to 24, 1954.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., April 23, 1954.

American Textile Machinery Exhibition, sponsored by American Textile Machinery Association, Atlantic City Auditorium, Atlantic City, N. J., April 26 to 30, 1954.

The Fiber Society, spring meeting, Institute of Textile Technology, Charlottesville, Va., May 5 and 6, 1954.

AATCC, New York Sect., Swiss Chalet, Rochelle Park, N. J., May 21, 1954.

STA, annual convention, Ocean Forest Hotel, Myrtle Beach, S. C., June 10 to 12.

AATCC, national convention, Atlanta Biltmore Hotel, Atlanta, Ga., Sept. 15 to 18, 1954.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1954.

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Textile Supply Co., Dallas, Texas • Charles H. Dunker Co., Los Angeles, Calif.
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ALLEN

Don't take it for granted that any hex socket screw is an Allen. There's only one way to take advantage of world famous Allen standards of precision fit and the strength and temper of special purpose Allenoy steel, in precision socket screws and keys: Specify genuine Allens, and be sure they come in the black and silver striped Allen package. Sold everywhere through leading Industrial Distributors exclusively. We will gladly give you the names of those in your locality and answer technical questions direct from factory Engineering Headquarters.

ALLEN ○ HEAD SET SCREWS: Achieve maximum *holding* power at the point by securing their *locking* action through uniform accuracy of fit, pitch diameter and perfect thread lead.

ALLEN ○ HEAD CAP SCREWS: Permit more compact design. Clean "pressur-formd" sockets and burr-free threads speed assembly work.

ALLEN ○ HEX KEYS: Size marked and made from special Allenoy steel for greater strength. Chamfered ends for quicker, easier insertion.

News OF THE MONTH

Dope-Dyed Rayon Staple

Dope-dyed rayon staple is in production at the Courtaulds, Inc., Mobile, Ala., plant. Ten standard colors are being produced, and special arrangements can be made to match mill shades. The plant is producing 1.5-den., 1¾-in. and 3-den., 2-in. staple.

Reduced Crystallinity Improves Cotton Properties

The crystallinity of cotton cellulose can be reduced 20 to 30% by treating cotton with anhydrous liquid monoethylamine, according to the Southern Regional Research Laboratory of the USDA. The partly decrystallized cotton should have a higher dyeing capacity and greater chemical reactivity than ordinary cotton; and it shows promise for an improved impact strength, toughness, and extensibility at break.

Southern Hosiery Men Meet

At the recent annual meeting of the Southern Hosiery Manufacturers Association in Roanoke, Va., Geoffrey H. Ladhams, of London, England, explained the "analytical method" of training loopers, where no production is obtained for several weeks but the learning curve reaches 100% much sooner than when conventional training methods are used.

Vicara Has More Crimp

The Virginia-Carolina Chemical Corp. is commercially producing a new highly crimped Vicara, according to Jesse F. Yeates, Jr., sales manager of the Fiber Division. This new Vicara is available as bleached or unbleached staple.

The new crimp is not claimed to be

Donald C. McGraw

Donald C. McGraw has been elected president of McGraw-Hill Publishing Co., Inc., to succeed his brother, the late Curtis W. McGraw (page 165).

Donald C. McGraw, youngest son of the late James H. McGraw, Sr., founder, has been associated with the company since 1919. He has been a director since 1935 and vice president since 1945. During World War II, he was a consultant to the Publishing and Printing Div., War Production Board.

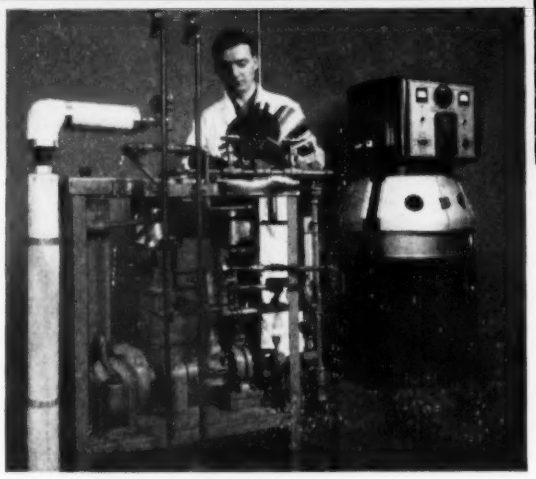
A native of Madison, N. J., Mr. McGraw is a graduate of Lawrenceville School and attended Princeton University. During World War I, he served with the U. S. Navy.

He joined McGraw-Hill in 1919 and two years later transferred to the pressroom and composing room. McGraw-Hill then operated its own printing plant in its building in New York. In 1924 he assumed supervision of the operation of the building and of the print shop.

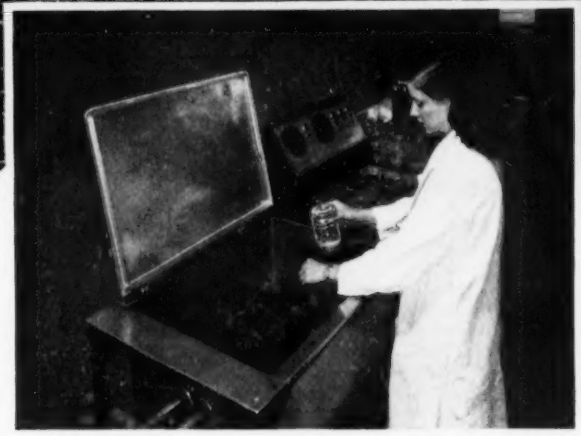
Since 1933, when he was made secretary of the company and put in charge of production and manufacturing, he has been responsible for the handling of all contracts for printing and binding, engraving, and paper supply for the entire McGraw-Hill operation.

In 1945 Mr. McGraw was named vice president for manufacturing and general services, the position he has held until now. In 1950 he became a director of the McGraw-Hill Book Co., a McGraw-Hill subsidiary, and of Newton Falls Paper Mill, in which McGraw-Hill has a half interest.

COMPLETE CUSTOMER SERVICE backs up PITTSBURGH'S BASIC DYESTUFF PRODUCTION

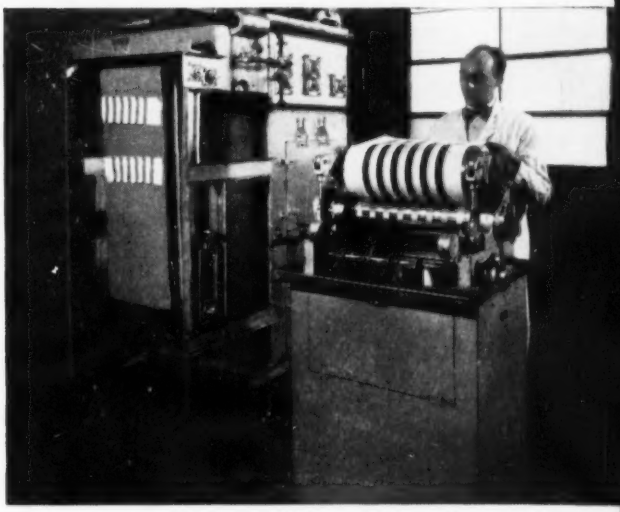


A new Customer Service Laboratory, operated by experienced personnel, stands behind every dyestuff order you place with Pittsburgh. Equipment like this pressure dyer and Fade-Ometer *guarantees* the quality made possible by Pittsburgh's coal-to-color production control.

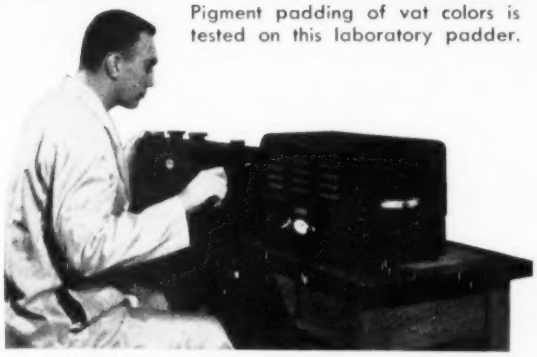


Fastness of Pittsburgh Dyestuffs to laundering is tested in laboratory in this stainless steel Launder-Ometer.

Pigment padding of vat colors is tested on this laboratory padder.



Printing and fixing characteristics of dyes are tested in printer in foreground and in vat ager in background.



A Spectrophotometer is employed in the analysis and standardization of Pittsburgh Dyestuffs.

FINE CHEMICALS DIVISION
Dyestuffs

PITTSBURGH COKE & CHEMICAL CO.

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TEXTILE NEWS

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ROVING CANS

Strong, tough, smooth, That's the industry reputation for C-D-F roving cans. Genuine Diamond Vulcanized Fibre body is finished inside and out with a moisture resistant synthetic enamel. Steel top rim is rust resistant plated, smooth, snugly fitted. From a sample can to carload full . . . with C-D-F you get smooth, seamless uniformity.

Write now for new folder showing complete C-D-F receptacles line!

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. . . with Textile Headquarters at 834 Haynes Street, Spartanburg, South Carolina. Call Spartanburg 3-6397 for DILECTO and DIAMOND FIBRE materials handling equipment . . . trucks, boxes . . . loom parts . . . top-speed shipments of CELORON silent gear blanks . . . friendly service from your C-D-F sales engineer.

NEWS *of the Month*

THREE-DIMENSIONAL PRINTING on a cellulose fabric is examined by Dr. Harry Grimmel (left), president of Metro Dyestuffs Corp., West Warwick, R. I., and Ernest Nathan, chairman of the board of Metro Atlantic. The simultaneous embossing and printing of cellulose fabrics is now possible with the development of colors that will withstand the high temperatures (385 to 450° F.) required by the process. Metro Dyestuffs Corp. has the exclusive rights to the manufacture and distribution of these Emboprint colors in the United States, Canada, Cuba, and Mexico. The colors were developed by Plastex GmbH., an affiliate of Dornbusch Machinery Co., Krefeld, Germany.

100% permanent, but the fibers are said to retain a marked degree of crimp throughout processing and into the finished fabrics. The new staple carries a 5¢-per-lb. premium over Vicara with the conventional crimp.

Russia Owns Up

Premier Malenkov of Russia recently admitted that Soviet textiles "leave much to be desired in finish and exterior appearance." He said that Russian consumers preferred foreign goods because of their better finish, "to the shame of the textile industry."

55-Lb. Card Production

A research project at N. C. State College on increasing cotton-card production has been underwritten by 12 Southern cotton mills. The project will take a year, cost about $57,000, and might save the individual mills up to $1,200 per card per year, according to William A. Newell, research coordinator at the School of Textiles. Preliminary experiments have increased card production up to 55 lbs. per hr., and the quality is reported to be good. Participating mills are: Morgan, Fieldcrest, China Grove, Linn-Corriher, Swift, Waverly, Borden, Washington, Cross, Joanna, Highland, and Avondale.

Safety Pays Off

Fulton Bag & Cotton Mills, Atlanta, Ga., recently completed another year in its safety contest. Twenty-eight departments completed 2,195,368 man-hours without a lost-time accident. Engraved plaques were presented to two spinning departments and one carding department under the rules of the point-system safety contest. An award of $100 was made for the best safety suggestion, and 1,000 employees were rewarded with banquets.

Wool-Fiber Discovery

A new discovery about the wool fiber cortex is said to open a whole new vista of applied research on wool. Dr. E. H. Mercer of the Textile Research Institute has shown that the cortex has two distinct parts with a sharply defined boundary, and the parts spiral around each other like a rope. These two parts of the cortex

FIRST AID IS COMING!

Keep A Spot Reserved For Your "NEW MILL TOOL"...

TEXTILE WORLD'S BUYERS' GUIDE and REFERENCE DATA Issue

Every subscriber to TEXTILE WORLD will receive this EXTRA issue beginning this year!

Include the Buyers' Guide along with tools you consider "first aids" in solving your daily mill problems. Have it instantly available to help you find the answers to maintained mill performance and efficient buying.

IF YOUR PROBLEM IS A PRODUCTION ONE . . . you will find many pages in the REFERENCE DATA section devoted to charts, tables, and formulas, all designed to help you in the mill. They will contain information on properties of both natural and synthetic fibers. Production information on carding, spinning, throwing, knitting, weaving, dyeing, and finishing will also be included. This section will be the FINEST composite of mill reference material ever published in a magazine.

IF BUYING IS YOUR PROBLEM . . . you will value the Classified List which will carry thousands of product headings for machinery, equipment, chemicals, dyestuffs, and other supplies, together with the names and addresses of manufacturers and the trade names of such items. The entire editorial facilities of TEXTILE WORLD have been utilized to make these listings as complete, easy-to-use, and truly representative of a changing industry as possible. Companies supplying services to the industry – factoring, engineering, commission work, etc. – will also be included if advertising in this issue.

In addition, many companies will supplement product listings with detailed information about their products in their advertising space. Such information will be page referenced in the Classified List, thereby giving you a complete story on a product or service.

Make the Buyers' Guide your . . .

CONSTANT COMPANION

beginning in Mid-November.

TEXTILE WORLD

330 West 42nd St., New York 36, N. Y.

If you are a mill executive not already subscribing and would like to receive a copy of this great reference issue (plus all the other twelve issues) send $2.00 now for a one-year subscription. If you want to save money, send $4.00 for three years, 39 issues. Be sure to tell us the name of your mill, its address, and your title.

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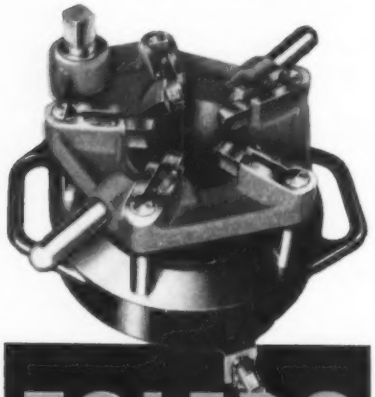
in 2½" to 4" pipe work



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NO. 2BR GEARED THREADER

Put this popular Toledo on your 2½" to 4" pipe. Watch it produce perfect tapered threads with *top-speed* . . . and a *minimum of effort.*

EFFICIENT HAND OPERATION . . . Light weight . . . easy handling. Convenient carrying handles. Employs Toledo receding die principle . . . 5 die segments . . . highest quality tool steel . . . three broad faced chuck jaws for easy centering.

HIGH SPEED . . . Operated with a Toledo Power Drive, the 2BR will thread 4" pipe in less than 2 minutes!

ORDER THROUGH YOUR SUPPLY HOUSE . . . Write for catalog 11A-52. The Toledo Pipe Threading Machine Co., Toledo, Ohio. New York Office: 165 Broadway, Room 1310.

Rely on the Leader

TOLEDO

PIPE TOOLS . . .
POWER PIPE MACHINES . . .
POWER DRIVES

explain why wool has a permanent crimp; and the two parts accept dyes differently and respond differently to chemical treatments. Shrinkage control during felting is thought to be one fruitful direction for research.

Washing Tests on New Fabrics

Can your new fabrics be washed in automatic home washers? That is the question Bendix Home Appliances Div. of Avco Mfg. Corp., c/o Miss Lee Ballard, 23 Grove St., New York 14, N. Y., can answer with its new laboratory facilities set up to do automatic-washing tests.

It's the Way You Do It

Any mill that uses a new fiber without full research into its performance and end uses is looking for trouble, Paul Carr of Goodall Fabrics, Inc., said recently at a meeting of the Palm Beach Co. He said the miracle is not in the fiber but in the way it is handled.

Profit Shares Come From Profits

Under a ruling by the Wage-Hour Div. of the Department of Labor, payments made to employees under profit-sharing plans must actually be shares of profits and not production bonuses, attendance bonuses, or a painless way of cutting down overtime costs. The payments belong to the employees and cannot be held as clubs over their heads.

Zetek in Production

Zetek, B. F. Goodrich Chemical Co.'s new fiber, is being produced in a pilot-plant operation with a monthly output of 5,000 to 10,000 lbs.

Problems Facing Knitters

The problems faced by the knitting industry are how to train skilled help, what to do about moisture regain in purchased knitting yarns, and how to maintain fashion interest in knitwear, according to the American delegation to the first International Congress of American and European knitters.

Dyeing Research Project

The report on the first five years of research into the chemistry of dyeing at the Textile Research Institute was good enough to convince enough companies to back a continuation of the research for another five years. With the aid of radioactive tracers, the research has shown that the swelling advantage of methyl alcohol (in acetate-dye solution) is counterbalanced by competition between the methyl alcohol and acetate dyes for absorption sites in the acetate fiber.

Still Going South

Naumkeag Steam Cotton Co. will have its entire operations in Whitney, S. C., by the end of the year. The company is leaving Salem, Mass. after 114 years of operation because doing business in the South is said to be much cheaper.

Nylon Sheets That Breathe

Nylon sheets and pillowcases are being manufactured by Pepperell Mfg. Co., Boston, Mass. The sheets are said to outwear ordinary sheets by better than two to one. The fabric construction is described as a "smooth, flat weave that breathes." Expected prices: pillow cases, $2; sheets, single bed, $5.95, double bed, $7.50.

Rayon in Cotton Hosiery

One-hundred-percent-cotton hosiery is not as durable as hosiery made from a ¾-cotton and ¼-rayon blend, according to durability tests made by A. K. U. (a large rayon company), Arnhem, Holland. A medium American cotton was used in the tests.

Chemical Properties Not Changed

The chemical properties of cotton cellulose are not changed during textile processing prior to chemical finishing, as far as the Southern Regional Laboratory of the USDA can find out. However, some physical properties of the fibers are changed: elongation-at-break is lowered and the tension modulus is increased.

American Methods

Ralph Tager, treasurer of Associated Spinners, Inc., commented on his return from a two-month survey of textile plants in Europe: "Textile mills in Western Europe have been making headway in improving their production and distribution facilities; however, American machinery, methods, and techniques could multiply the output many times."

News from Du Pont...

A NEW HYDROGEN PEROXIDE PLANT OPENS IN MEMPHIS

Faster, More Convenient Service... for the Southern Textile Industry

The South now has *its first hydrogen peroxide plant*—in Memphis, Tennessee. This new modern plant is Du Pont's third and provides another dependable source for "Albone" hydrogen peroxide. By supplementing the hydrogen peroxide production of the northeast, the Memphis plant assures faster shipments . . . improved service for southern textile mills.

Hundreds of mill owners have found "Albone" hydrogen peroxide to be ideal for kier bleaching and for all types of continuous systems. Their long experience proves you can rely on "Albone" and the technical service behind it. This valuable service includes *free* bleachery surveys conducted by men with wide experience in all phases of textile bleaching. If you now use or plan to use hydrogen peroxide, it will pay you to get all the details. Just send in the coupon below.

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DIFFICULTIES OF DYEING

Many dyeing difficulties are caused by unsuspected metallic ion contaminants found in the dyes themselves or in the water used to prepare the dyeing solutions. The ions most responsible for these troubles are calcium, magnesium, iron, copper, zinc and tin. By inactivating the offenders and preventing them from taking part in the reactions involved, Versene can keep your dyeing on the level.

CHROME DYEING

Versene in dyebath prevents shade changes caused by traces of iron, copper, zinc and tin.

ACID DYEING

Versene in dyebath prevents shade changes in acid colors caused by iron, copper, zinc and tin traces.

ACETATE COLORS

Versene in the soap bath completely and permanently (without formation of precipitates) softens the water of the bath and so eliminates formation of insoluble calcium, magnesium and iron deposits. Prevents spotting and increases color yield.

VAT DYEING

Versene completely "conditions" the water and removes foreign metallic ions. Prevents shade changes, spotting and streaking.

NAPHTHOL DYEING

Versene Fe_3 works best to prevent the formation of metallic naphtholates which cause crocking, and so keeps them from precipitating onto the goods. Also, used in after-treatment to obtain the greatest fastness properties of colors and to minimize crocking.

VERSENE COMPLEXING POWER GUARANTEED

Versene is made only by the Bersworth Chemical Company under patents and processes originated, developed and operated by F. C. Bersworth. Extremely stable at high temperatures throughout the pH range, complexing power is guaranteed in sample or carload lots. The product is available as several formulas in liquid or powder form. Write Dept. D for Technical Bulletin No. 2 and samples. Chemical counsel for special problems on request.

VERSENE WATER TEST KIT. Tells Total Hardness in 2 minutes. Accurate to 1 grain per gal. Versenate Method. Complete with instructions $5.00 Postpaid.

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"Chemistry's most precise chemicals"

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Stegel Chemical Company, Inc., One Hanson Pl., Brooklyn 17, N. Y.
George Mann & Co., Inc., 251 Fox Point Boulevard, Providence, Rhode Island
Wasatch Chemical Company, 2225 South Fifth East, Salt Lake City, Utah
Barada & Page, Inc., Houston, Dallas, Corpus Christi, New Orleans, St. Louis, Wichita, Oklahoma City, Tulsa, Kansas City, Mo.
Braun-Knecht-Heimann Co., San Francisco, California
Van Waters & Rogers, Inc., Seattle, Wash. & Portland, Ore.
Braun Corporation, Los Angeles, California

NEWS ABOUT Suppliers

EQUIPMENT SUPPLIERS

Acme Steel Co., Chicago, Ill., has announced the appointment of John H. Harper as chief staff engineer for the company's Riverdale plant, Riverdale, Ill.

Bahan Textile Machinery Co., Inc., Greenville, S. C., has appointed a new representative, W. L. Wilson, for central and eastern North Carolina and Virginia.

The Bassick Co., Bridgeport, Conn., a division of Stewart-Warner Corp., has purchased the industrial caster and wheel line now manufactured by Kilbourne & Jacobs Co., Columbus, Ohio.

Binney & Smith Co., New York, N. Y., has made H. J. MacNeill general manager of the Crayon Sales Div. V. R. Watson, Western division manager, comes to New York as assistant to Mr. MacNeill. C. J. Ahern, Los Angeles district manager, has been appointed Western division manager, with headquarters at Los Angeles, Cal.

Borg-Warner Corp., Chicago, Ill., has made D. E. Gamble chairman of the supervisory board and T. L. Knecht president and general manager of the Borg & Beck Div. Mr. Gamble previously was president of the division and Mr. Knecht was vice president and general manager. George W. Borg will serve as chairman of the executive committee of the Borg & Beck Div.

The Bristol Co., Waterbury, Conn., has made F. W. Borchers general sales manager. D. C. Sanford has been named manager of the application engineering department.

H. W. Butterworth & Sons Co., Providence, R. I., has announced several changes in management responsibility. Edward S. Pierce, formerly works manager, has been made general manager in charge of engineering, manufacturing, research and development, purchasing, and personnel. George Bromley, formerly shop superintendent, is now works manager in charge of manufacturing, inspection, production, tools, and methods.

TRUMAN L. CLAPP recently resigned as president of Clapp & Poliak, Inc., New York, N. Y., producers and managers of industrial expositions.

Carpenter Steel Co., Alloy Tube Div., Union, N. J., has made P. L. Coddington assistant to the president. William R. Staples, former assistant manager of sales, has been promoted to manager of sales. Arvin W. Harrington has been named sales representative in metropolitan New York and Connecticut.

Charlotte Leather Belting Co., Charlotte, N. C., has promoted Robert L. Swift from South Carolina salesman to sales manager. Mr. Swift will be located in Charlotte. Edwin Christenberry, Jr., formerly overseer of weaving at Victor Monaghan Co., Greenville, S. C., has been made South Carolina salesman. Mr. Christenberry will be located in Greenville.

Cooper Alloy Foundry Co., Hillside, N. J., has appointed Clayton L. Heintz manager of distribution.

W. D. Dodenhoff Co., Greenville, S. C., has reorganized, following the death

"But, I've been doing this every day since I saw what **Swift's Soaps** *do for our textiles!"*

Leave it to a textile man—he really believes in Swift's Soaps. At least, that's our impression when we talk to all the successful operators who consider Swift's Soaps tops for scouring, dyeing, fulling and other specialized service.

You, too, will find that Swift has the *right* soap for *every* textile need. And more, Swift's Soaps combine proper uniformity of composition with excellent physical form.

If you're faced with a unique, especially tough soap requirement, call on us. Our years of soap-making experience can help you find a soap that fits your particular operation.

Listed below are some of Swift's fine soaps. You can order any one of them from Swift's distribution points coast to coast and expect immediate delivery.

Vertex Flakes • Morrow R. O. Flakes • 557 Flakes
White Ribbon Flakes • Wool Flakes

Call **SWIFT** first for **SOAPS**

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TO THE INGENIOUS

Not familiar with this

NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.

Recovering 1000 pounds of Raw Wool Each Week from Sewer

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Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents

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From PRECISION only—exclusive formula, NON-SLOUGHING Cams (standard or special) for spinning and twisting—at no EXTRA COST—providing amazing, up-to-4 way, yarn control. Get "jewelled movement" ring rail reversing, longer lived accuracy—no sloppy backlash, due to Cams. Build firmer, longer running, higher speed bobbins. Cut your time and costs. No other cams are made with this mathematical accuracy. Write for our Cam Computation Chart and full information, now!

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- Warp Wind (Combination)
- Wool Spinning

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News About SUPPLIERS (Continued)

ALBERT H. BORCHARDT has retired as vice president of Worthington Corp., Harrison, N. J. He had been with the company for 44 years.

of Mr. Dodenhoff, with these officials: president and treasurer, Mrs. W. D. Dodenhoff; vice president and general manager, Wm. F. Leinweber, Jr.; secretary, Walter F. Brooks; sales manager, Carroll A. Campbell; production manager, Robert E. King; service manager, A. V. Moody; and plant superintendent, J. W. Cole.

Foster Machine Co., Westfield, Mass., has made Edwin H. Ely its representative in Georgia, Tennessee, Alabama, Mississippi and western South Carolina. He succeeds Fred P. Brooks, who represented the company in the same area for 20 years until his recent retirement.

Gladwin Plastics Co., Atlanta, Ga., has appointed Ernest A. Zingale sales representative in Virginia, North Carolina, and South Carolina.

John Hewson Co., New York, N. Y., has named Thomas A. Collier Co., 1123 Western Savings Front Building, Philadelphia, Pa., and H. E. Ramsford Co., Grant Building, Pittsburgh 22, Pa., as its representatives.

Minnesota Mining & Manufacturing Co., St. Paul, Minn., has elected Robert L. Westbee vice president of the newly created electrical products division.

B. F. Perkins & Son, Inc., Holyoke, Mass., has appointed Cecil A. Potter, formerly president of the Machinery and Engineering Corp., Westminster, Mass., as general manager. Mr. Potter was general manager and chief engineer of Duesberg-Bosson of America, Inc., Fitchburg, Mass., for eight years.

Pfaff Industrial Sewing Machine Corp., New York, N. Y., has opened new headquarters at 1140 Broadway, New York, N. Y.

Raybestos-Manhattan, Inc., Passaic, N. J., has appointed J. H. Matthews executive vice president. He is also vice president of The Canadian Raybestos Co. Ltd., Peterborough, Ont., Canada.

Robert Reiner, Inc., Weehawken, N. J., has announced that Karl T. Marx has taken over the direction of the Reiner full-fashioned machinery sales division. He continues to handle advertising and public relations.

Reliance Electric & Engineering Co., Cleveland, Ohio, has added two new application engineers to the Pittsburgh, Pa., and Newark, N. J., sales offices. Garvin L. Jones is assigned to the Newark office. Thomas J. Lisy goes to Pittsburgh.

Riggs & Lombard, Inc., Lowell, Mass., has appointed A. Harold Zavotti, Jr., direct sales representative to textile finishing plants in the Pennsylvania area. Included in his territory are Pennsylvania, New Jersey, Delaware, West Virginia, Maryland, and Northern Virginia.

Saco-Lowell Shops, Boston, Mass., and Sanford, N. C., has appointed Richard C. Scott, former New York editor of TEXTILE WORLD, to a position on its publications and public-relations staff. Mr. Scott will be located for the time being at the Biddeford, Me., plant and later on will be in the Boston office. William S. Baillie has been made sales engineer with headquarters at the Atlanta, Ga., office.

Sill Industries, Maplewood, N. J., has appointed United States Supply Co., East Providence, R. I., as its New England sales representative to handle sales in all six New England states.

Standard Pressed Steel Co., Jenkintown, Pa., has named Raymond N. Gruber director

Perhaps

SULPHUR-DIOXIDE Would Fit Into YOUR PICTURE!

TC TENNESSEE CORPORATION

SULPHUR-DIOXIDE HIGHEST QUALITY SO_2

If you have a job that calls for a superior reducing or bleaching agent, antichlor, PH control or neutralizer . . . Tennessee's highest quality Sulphur Dioxide will do it better. Usually a more efficient and economical operation can be had through the use of this chemical (SO_2) with its varied and extended uses.

Let our technical staff show you how you might employ Tennessee's highest quality Sulphur Dioxide to greatest advantage.

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617-29 Grant Building, Atlanta, Georgia

for the best in CANVAS roving trucks

LOOK FOR Lane

Designed especially for running in narrow aisles, between machines, any tight place—*only* this Lane Style 28 Roving Truck incorporates *all* these quality features for *long, dependable service at very low cost.*

- Sturdy, strong-stitched body of Lane-woven duck—either plain or plasticized.
- Scuff-proof leather rim to protect against wear.
- Lightweight, extra-strong, spring-steel frame with rugged, flexible hardwood bottom.
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12	48″	20″	26″
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Lane canvas baskets, hampers, and trucks are *built to take it, built to last!* There are other canvas baskets, but there's only *one* Lane. Always look for the Lane mark—to be sure!

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Textile Finishers Realize it pays to

DESIZE with EXSIZE-T

Leading textile finishers know that nothing removes starch faster, more dependably and more efficiently than Exsize-T. And it is safe!

Exsize-T keeps its starch digesting power for long periods of time when properly stored. It is stable in the bath over a wide range of temperatures. Not a chemical! Exsize-T is a liquid enzyme starch digester specially cultured for the textile industry.

Free booklet and working samples on request.

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News About SUPPLIERS (Continued)

W. F. ZIPSE, president of Geigy Co., Inc., New York, N. Y., recently celebrated his fiftieth anniversary with Geigy. He joined the company when it was established in 1903.

of marketing research. Charles J. Betz has been advanced to Mr. Gruber's former post of sales manager. John W. Breitmayer, of the Unbrako sales staff, has succeeded Mr. Betz as assistant sales manager.

Standard Mill Supply Co., Providence, R. I., has appointed Alexander A. Glod as export sales manager. This move was made in conjunction with the consolidation of Standard's export sales office with its factory operations at Pawtucket, R. I.

Thermomat Co., Inc., Trenton, N. J., has appointed Wyrough & Loser, 143 E. State St., Trenton, N. J., as its representative.

United States Steel Corp., Chicago, Ill., has announced that Roger M. Blough, vice chairman of the board of directors, has been elected general counsel. He succeeds Nathan L. Miller, who died recently.

Westinghouse Electric Corp., Pittsburgh, Pa., has named C. P. Walker manager of the general-industries section in the industrial department of the Apparatus Div.

CHEMICAL AND YARN SUPPLIERS

American Cyanamid Co., Calco Chemical Div., Bound Brook, N. J., has appointed James L. Naylor manager of the Dyestuff Dept. He succeeds J. Pfister, who will continue active in the company, give his time to its New England business, and be available for special assignments.

American Viscose Corp., Philadelphia, Pa., has appointed Samuel T. Moore, Jr., a rayon salesman in the Providence, R. I., office. Mr. Moore replaces Cyril Sumner, Jr., who was recently transferred to the rayon tire-yarn division in Akron, Ohio.

Celanese Corp. of America, New York, N. Y., has promoted Alex Rose, manager of the Rock Hill, S. C., acetate-yarn plant, to the new position of director of engineering of the textile division of the company. John P. Loud was named to succeed Mr. Rose as plant manager of the Rock Hill unit. William H. Barnwell has been named sales manager of Celanese Venezolana, S. A., with headquarters at Caracas, Venezuela.

Chemstrand Corp., Decatur, Ala., has appointed C. A. G. Blomquist, Jr., senior engineer in the technical section of the intermediates plant at the Pensacola, Fla., nylon plant. Drs. William C. Looney and Cilton W. Tate have been appointed chemists in the research and development department at Decatur, Ala.

Colgate-Palmolive-Peet Co., Jersey City, N. J., has made Marshall S. Lachner manager of soap and industrial sales. He succeeds James A. Reilly, deceased.

Columbia-Southern Chemical Corp., Pittsburgh, Pa., has announced that it will enter the ammonia production field. The firm plans to construct its first ammonia-producing facility at Natrium, W. Va. Contracts for the construction work will be let in the near future, and the firm expects to be in production by late 1954.

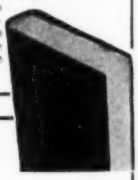
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., has announced that Dr. Harold E. Woodward, one of America's foremost azo-dye experts, recently retired after more than 35 years as a research chemist at the Jackson Laboratory, Deepwater Point, N. J.

Emkay Chemical Co., Elizabeth, N. J., has announced that Edward B. Simpson has joined the staff as technician and sales representative.

NYLON TECHNOLOGY

Just Published!

The book deals with the approaches and techniques applicable to the processing of nylon staple on the cotton, worsted, and woolen systems of spinning. It discusses the processing techniques in regard to continuous-filament nylon as applicable to throwing, slashing, quilling, and the weaving, full-fashioned, and tricot industries. Significant chapters cover the employment of nylon staple for half-hose and outerwear fabrics. **By K. H. Inderfurth, Textile Eng. 335 pp., 113 illus., $6.50**



RAYON TECHNOLOGY

(Including Acetate)

HANDBOOK FOR TEXTILE MILLS

A compilation from many of the outstanding technicians in the textile industry, this book tells exactly how to use rayon and acetate on present or available equipment, bringing you, in the Second Edition, improved techniques and methods. It describes advanced but accepted practices in all divisions of the industry—cotton, woolen, worsted, synthetic, knitting, finishing. Covering the spinning of rayon staple by the three principal systems, and throwing, weaving, knitting, dyeing, and finishing—all phases of textile manufacture—it shows the profitable ways to process rayon and acetatte into yarn, gray goods, and finished fabrics. **By American Viscose Corp. 2nd Ed. 335 pp., 108 diagrams and photos, $7.00**

FABRIC DEFECTS

A practical guidebook of almost 200 actual case histories of defects in textile materials, with explanations of the contributing factors and suggestions for analysis. Describes principal types of defects occurring in cotton, filament rayon, spun rayon, and blended fabrics. Over 95 original photomicrographs illustrate gray-goods manufacturing defects from raw fiber through weaving—rayon or man-made yarn faults—dyeing and finishing faults—imperfections in finished garments, etc. **By J. B. Goldberg, Research Dir., J. P. Stevens & Co., Inc. 363 pages, 96 illus., $6.50**

HOW TO CONTROL PRODUCTION COSTS

Brings a thoroughly unique approach to the problem of cost, pricing, and profit in manufacturing, showing how to reckon costs by the total conversion-cost method. Fully explains the approach and describes the methods to plug cost leaks . . . set up prices on each line . . . and develop effective methods of cutting costs and increasing production. Gives every tool for putting the method to work, telling how to set up a realistic overhead . . . find standard material costs . . . plot expenses . . . find variances. **By P. Carroll. 264 pp., 76 illus., $5.00**

ENGINEERING STATISTICS AND QUALITY CONTROL

Just Published

A clear, practical treatment of modern statistical methods for cutting costs and stepping up plant efficiency. Reviews fundamental measures—averages, variabilities, efficient calculation—and covers use of normal curves, control charts and their application, acceptance sampling methods—with a special section on applying statistical methods right on the job! Packed with experiments, examples, and illustrations to point up the text. **By Irving W. Burr, Prof. of Mathematics and Research Assoc., Statistical Lab., Purdue University, 442 pp., 211 illus., $7.00**

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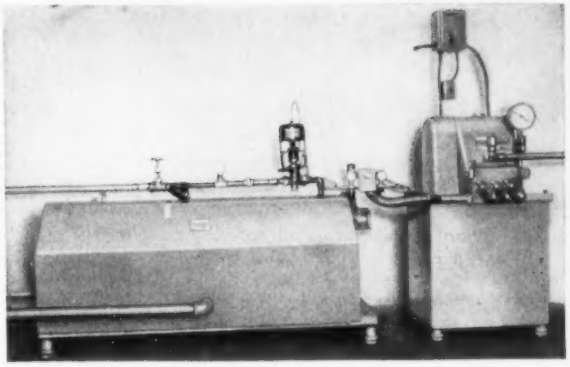

for continuous, controlled flow of fresh, uniform size

it's the unique, tested

Scott & Williams

HYDROPULSE

The HYDROPULSE is a unique combination of special heat exchanger and high pressure homogenizer developed, built and proved *in the textile industry.*

It produces a *continuous, controlled* flow of *fresh, uniform* size – at your rate of slasher consumption.

Thus it enables you to:

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★ **Cut your size preparation costs** – by completely eliminating cooking time, wasted size, high steam consumption, and the varying dilution due to steam condensation.

The HYDROPULSE offers you all the advantages of homogenization *plus* the even more important advantages of continuity and control.

In sizing costs alone – not to mention improvement in product quality – the HYDROPULSE pays for itself in a matter of months.

For complete, detailed information on the HYDROPULSE in terms of your own individual requirements, write or call Scott & Williams, Inc., or the Southern Sizing Company.

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East Point, Ga.

Exclusive Sales Agents for the Textile Industry

TO THE INGENIOUS

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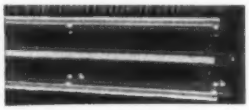
NEW INDUSTRIAL TOOL

Free Sample of Fullergript Brush Strip

What problems can you solve by adapting Fullergript to your equipment?

This brush strip can be coiled or twisted into numerous shapes. It can be formed to give intermittent or continuous brushing action. It adapts to stationary or power driven applications. How it may help *you* is a matter of your own ingenuity — plus the services of the Fuller Brush Engineering Dept. Find out what Fullergript can do by sending for a sample strip. We will also send a booklet showing its versatility. Simply write today.



Twice the brush life, because of Fullergript's continuous density, is secured on quill strippers — the machines that eliminate hand labor in removing waste thread from textile bobbins and quills.

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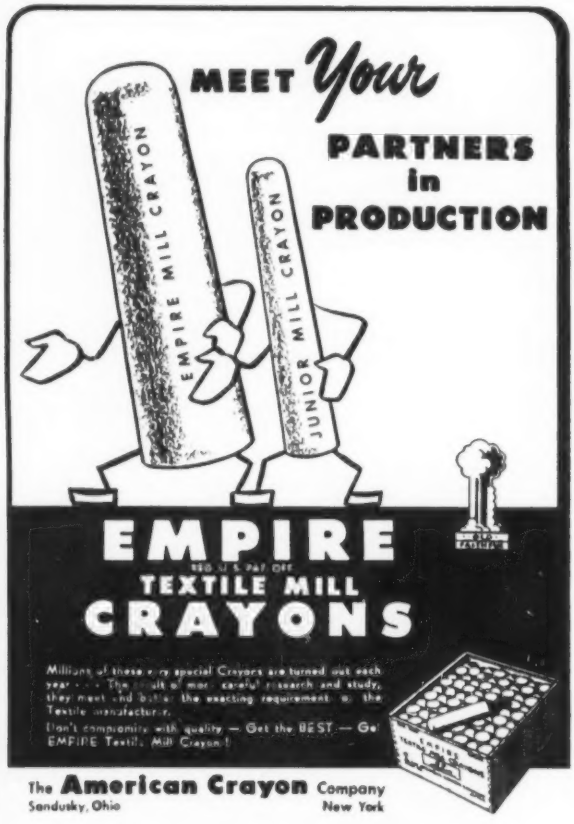
Power driven brushes, Factory & Institutional cleaning tools, Waxes & Detergents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EMPIRE MILL CRAYON
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Millions of these extra special Crayons are turned out each year . . . The result of many careful research and study, they meet and battle the exacting requirements of the Textile manufacturer.
Don't compromise with quality — Get the BEST — Get EMPIRE Textile Mill Crayons!

The American Crayon Company
Sandusky, Ohio New York

News About SUPPLIERS (Continued)

C. W. MITCHELL has been appointed executive vice president of Nyotex Chemical Co., Houston, Tex., a subsidiary of Consolidated Chemical Industries, Inc.

General Aniline & Film Corp., New York, N. Y., has appointed Chandler T. White as manager of operations of the Rensselaer, N. Y., plant. Mr. White is presently a vice president of General Aniline & Film and general manager in charge of production of the General Aniline Works Div., which also has dyestuff and chemical manufacturing operations at Grasselli, N. J.

Glass Fibers, Inc., Toledo, Ohio, has appointed Stewart W. Schulmeyer manager of electrical sales of the Textile Div.

Heyden Chemical Corp., New York, N. Y., has announced the retirement of E. R. Herrick, plant manager since 1940 of the Fords, N. J., plant and associated with the company for 30 years. He will continue with Heyden as a consultant. Arthur W. Willis, formerly assistant plant manager of the Princeton, N. J., plant, has been appointed manager of the Fords plant.

I. C. I. Ltd., Dyestuffs Div., Manchester, England, has appointed G. S. J. White, chief colorist of the Dyestuffs Div., as division director in charge of technical service departments. He succeeds Dr. F. J. Siddle, who has taken up the post of managing director of the Terylene Council.

Owens-Corning Fiberglas Corp., Toledo, Ohio, has made Matthew Cantillon advertising manager of the Textile Products Div. In Cincinnati, Ohio, Henry R. Hogendobler, formerly industrial-insulation sales manager, has been named vice president and general manager of the Fiberglas Contracting and Supply Co.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has announced that the new $8-million electrolytic chlorine and caustic soda plant at the Calvert City, Ky., works is now in production.

Pittsburgh Coke & Chemical Co., Fine Chemical Div., Pittsburgh, Pa., has appointed Richard Jenkins as textile chemist and colorist.

Reichhold Chemicals, Inc., New York, N. Y., has acquired space in the new Alexander Smith, Inc., office building in White Plains, N. Y., preparatory to moving its executive offices there.

Rohm & Haas Co., Philadelphia, Pa., has elected John C. Haas a vice president and member of the executive committee. He has been a director of the company since 1948.

A. E. Staley Manufacturing Co., Decatur, Ill., has promoted Ray E. Kilty to assistant manager of its Boston sales office.

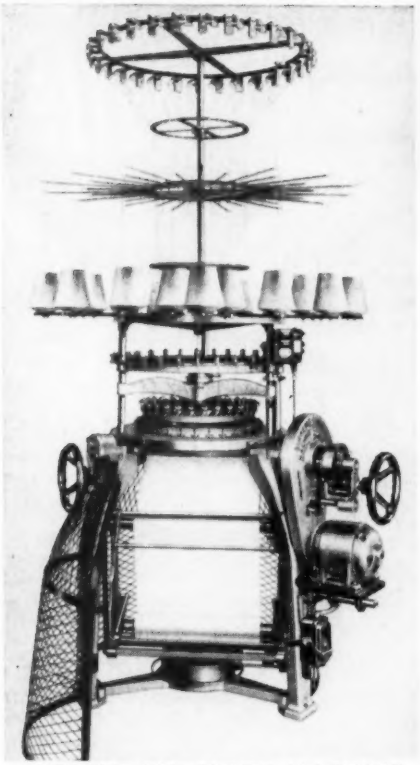
OTHER SERVICES

AATCC, Lowell, Mass.— William R. Moorehouse, a founder-member of the association, and for more than 20 years its treasurer, has submitted his resignation to the council.

Henderson, Lindsay, & Michaels, Inc., Greenville, S. C., engineers, have made Edmund Lindsay general manager. Kenneth Edgar, partner, will assume the duties of treasurer. The firm is closing its Greensboro, N. C., office and expanding its Greenville office.

Ben A. Leppard, consulting engineer, Greenville, S. C., has opened an office in Greenville to provide consulting-engineering services to the textile industry in heating, ventilation, and air conditioning. Mr. Leppard was formerly connected with the Central Engineering Dept. of J. P. Stevens & Co., Inc.

Rayon Information Center, New York, N. Y., has engaged J. B. Goldberg, consultant, as technical adviser.



SUPREME RIB CLOTH MACHINE

IT PAYS TO USE WESCO

ELECTRIC STOP-MOTIONS

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STANDARD THE WORLD OVER

Performance — WESCO Electric Stopmotions on knitting machinery are the logical choice of men who know how to get the best performance from the machines they buy—Specify WESCO and you get maximum production. Installations are simple and easily made.

LOOK FOR "WESCO" ON ALL THESE KNITTING MACHINES:

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STOP-MOTION DEVICES CORP.

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Another of a Series of Knitting Machine Builders. OTHERS to follow

STEAM

FOR HEAT
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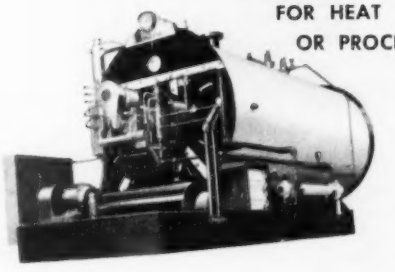

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

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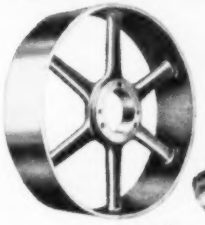
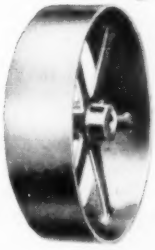
A *Complete* LINE OF PULLEYS





STOCK *"SURE-GRIP"* PULLEYS

Cast iron with straight or crown face. One-piece flanged and split-tapered hub permits easy installation and removal from shaft. Four hubs take care of bore range from ½" to 4¼". "Sure-Grip" Pulleys are available in sizes from 4" to 36" O.D., in face widths from 2½" to 12". From Stock. SEND FOR BULLETIN 493.

SPECIAL PULLEYS

Cast Iron. Available in all types; standard flat belt pulleys, solid or split, single or multiple arm, and flanged, if required. Bronze bushed or ball bearing equipped loose pulleys, conveyor, tapercone and special designs made to customer's specifications. WRITE FOR DETAILED INFOR-

T. B. *Wood's* SONS COMPANY
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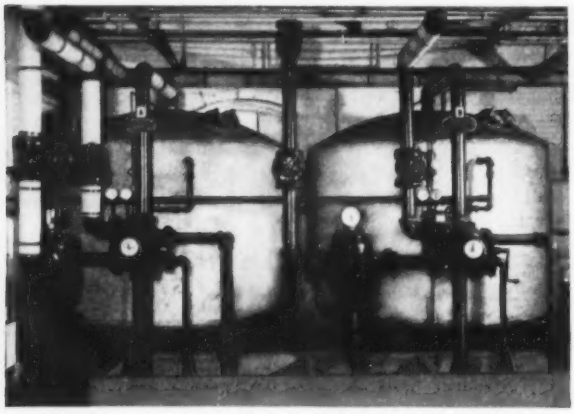
Mechanical Power Transmission Manufacturers—Since 1857.

Cambridge, Mass., Newark, N. J., Dallas, Tex., Cleveland, O.



HOW EMPIRE WORSTED MILLS SAVE $12,000 ANNUALLY

Empire's Water Supply—the Chadakoin Creek at Jamestown, N.Y.—became polluted. Color rose to 60 ppm and turbidity to 25 ppm, causing streaks, stains and off-shades. Inspector's insistence on quality increased re-runs. Water hardness of 6 grains added to these troubles—wasted soap and detergents. Boilers scaled and wasted fuel.

Permutit thoroughly studied these problems and installed the following: 4 Permutit Pressure Filters; Permutit Chemical Feeders for alum, alkali, and chlorine dosages; 2 Permutit Softeners filled with Permutit Q, the new high capacity zeolite.

Soft, clear water resulted—increasing dyeing output. Greater penetration and uniformity raised quality—saved dyestuffs. Seldom are lots re-run. Zero soft water reduced soap consumption, saved fuel by eliminating boiler scaling.

Best of all—this Permutit installation more than paid for itself in less than two years!

Better write today for complete information. THE PERMUTIT COMPANY, Dpt. TW-10, 330 West 42nd Street, New York 36, N.Y., or Permutit Company of Canada Limited, 6975 Jeanne Mance Street, Montreal.

WATER CONDITIONING HEADQUARTERS FOR OVER 40 YEARS

PERMUTIT®

NEWS ABOUT *Mills*

COTTON MILLS

Adamo Co., Los Angeles, Calif., plans to erect a new plant on Vermont Ave. The cost is estimated at $750,000.

Buck Creek Cotton Mills, Siluria, Ala., has let a contract for $500,000 to Marbury-Pattillo Construction Co., Birmingham, Ala., to rebuild its plant.

Buffalo Weaving & Belting Co., Buffalo, N. Y., plans to enlarge its plant at a cost of $20,000.

Comal Cottons, Inc., New Braunfels, Texas, will erect a new plant unit that will cost $90,000.

Dyersburg Cotton Products, Inc., Dyersburg, Tenn., is installing a new air-change and humidity-control system in the spinning and winding departments.

Groves-Thread Co., Gastonia, N. C., will construct a new mill for the production of specialty yarns and threads. John Kaylor, Gastonia, is the contractor. The new mill will be one story and will contain 30,000 sq. ft. of floor space.

Scotland Mills, Inc., Laurinburg, N. C., is constructing a new plant at Laurinburg-Maxton Air Base that will house the company's bedspread division. The new buildings will contain about 100,000 sq. ft. of floor space. The space that is being vacated by Scotland Mills will be occupied by Dixieana Mills, which recently purchased the Scotland Mills rug division.

Slater Bros., Kings Mountain, N. C., is constructing a $30,000 addition to its mill. The new addition will house three warpers, one for rayon and two for cotton, and one beamer.

Springs Cotton Mills, Fort Mill, S. C., has completed plans for an expansion program. The area under one of the older mill buildings will be excavated to make floor space available for 15,000 spindles and 250 looms.

Startex Mills, Tucapau, S. C., will install General Electric motors on each of its 470 Model E 40-in. Draper looms in the No. 1 lower weave room.

Velvetone Mills, Inc., is the new name of the former Mount Alto Bed Spread Co., Inc., Calhoun, Ga. The company will discontinue the manufacture of tufted cotton bedspreads and will devote its full production to tufted rugs and carpets.

Wabasso Cotton Co. Ltd., Grand'Mere, Que., is constructing a one-story addition to its plant on 6th Ave. The brick addition will measure 40x80 ft. The estimated cost is $5,000.

West Point Mfg. Co., Shawmut, Ala., recently closed bids for the construction of a local community center and swimming pool. The contract will be awarded soon.

Woodside Mills, Greenville, S. C., has let a $125,000 contract to Daniel Construction Co., Greenville, for an addition to its mill at Simpsonville, S. C. J. E. Sirrine Co., Greenville, is the engineer.

WOOLEN AND WORSTED MILLS

Albany Felt Co., Albany, N. Y., has begun construction of a four-story brick addition to its main office building. Extensive alterations have been made to the rear of the mill to provide additional space for the fabric research and development program.

Ames Textile Corp., Lowell, Mass., has let the contract to

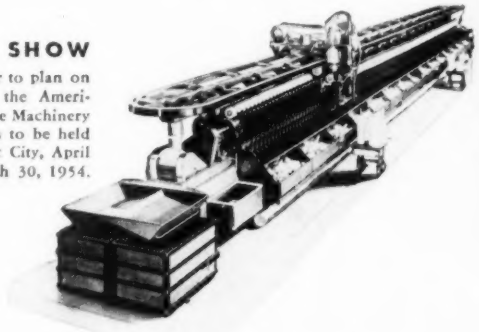
OPERATORS: This machine is

Designed for Convenience...

Operation of the machine is simple: all the operator has to do is to drop the bobbins in the pockets, lay up the ends in the clamps, and replace the full cheeses with starters. For convenience in doing this, (1) the bobbin bins are directly below the pockets so bobbins are ready to hand without stooping, (2) bobbin pockets are positioned and slanted for an easy drop without reaching, as shown in the picture, (3) the thread clamps are right up in front where a natural motion puts the end in place, and (4) full cheeses automatically swing out at about shoulder height where they can be handled comfortably. The trident truck (not visible in the picture) alongside the operator is handy for supply of starters and stacking of filled cheeses, so that little or no lifting or carrying is necessary. *These arrangements are all made with the idea of reducing fatigue to a minimum* so the operator can handle the most ends per minute with the least effort.

1954 SHOW

Remember to plan on attending the American Textile Machinery Exposition to be held at Atlantic City, April 26 through 30, 1954.



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We are pleased to announce the expansion of our consulting services to embrace:

PRODUCTION and INVENTORY PLANNING and CONTROL
SALES ANALYSIS and FORECASTING
SALES PLANNING and PROGRAMMING
SALES and OFFICE STANDARD PRACTICE INSTRUCTIONS
ORGANIZATION ANALYSIS PERSONNEL APPRAISAL

These services will be under the direction of Mr. Peter M. Fekula now affiliated with Barnes Textile Associates, Inc. They will complement our established consulting activities in the fields of general engineering, industrial engineering, cost and quality control, materials handling and industrial relations.

Mr. Fekula has had broad experience in a variety of industries in both consulting and operating capacities. Recently he completed an outstanding project for a well-known textile company which brought about close coordination of production and sales. He has been able to apply to textiles many of the principles which have proved so successful in the automotive and aircraft industries.

We will be pleased to give further information about the services rendered by our new Peter M. Fekula Division, as well as by our other departments.

Surveys—Reorganizations—New Plant Developments for Cotton, Wool, and Synthetic Yarn and Cloth Processing, Bleaching, Dyeing, Printing and Finishing.

★ Plant Appraisals ★ Mechanical and Operating Surveys—New Methods ★ Scheduling and Planning ★ Work Load Studies, Job Analysis and Evaluation, with Incentive Plans ★ Standard Cost Installations ★ Cost Control Methods

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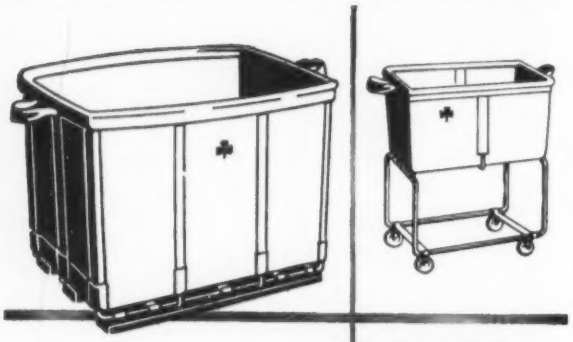

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News About **MILLS** (Continued)

to construct a new mill at Ellsworth, Me.

Belmont Woolen Yarn Mills, Woonsocket, R. I., has been purchased by Alfred W. Cavedon, secretary-treasurer and manager of Aldon Spinning Mills Corp., Talcotville, Conn. Belmont will continue to operate under its present management.

Sidney Blumenthal & Co., Inc., is moving its purchasing and technical departments from the firm's Shelton, Conn., plant to Rocky Mount, N. C. Although headquarters of these departments are being moved, small staffs will be retained in Shelton to service the local needs of that plant.

Chatham Mfg. Co., Elkin, N. C., has installed four sets of Proctor & Schwartz cards in its new worsted-division plant.

Collins & Aikman of Canada Ltd., Farnham, Que., has completed an expansion program at its plant. Further expansion is now being contemplated.

H. King Cummings, president of D. E. Cummings Co., Newport, Me., and of Guilford Woolen Mills, Guilford, Me., plans to establish a new plant in the Passamaquoddy Project at Eastport, Me. Woolen and blended-fiber fabrics will be produced. About 75 workers will be employed when the plant begins production later this year.

A. D. Ellis Mills, Inc., is completing a 116-ft. addition to its mill. The finishing department of Mills No. 1 and No. 3 will be located in the new addition.

Goodall-Sanford, Inc., has begun the construction of its $800,000 plant at Hot Springs, N. C. C. M. Guest & Sons, Greensboro, N. C., is the general contractor.

Lockport Felt Co., Newfane, N. Y., is proceeding with plans to establish a 30,000-sq.-ft. branch plant at Starkville, Miss. City voters have approved a bond issue to finance it.

National Spinning Co. is constructing a new worsted yarn spinning mill at Washington, N. C. Lockwood Greene Engineers, Inc., is the architect-engineer. The first unit will be a one-story, fully air-conditioned plant designed to permit later expansion.

Roger James Woolen Corp., Philadelphia, Pa., has been incorporated for $20,000 to manufacture men's-wear woolens and worsteds. L. A. Lazarus, S. J. Shyman, and M. N. Shyman, all of New York, are the incorporators.

SYNTHETICS MILLS

Ames Textile Corp., Cleveland, Ga., will construct a new plant for the production of staple synthetics fabrics not currently in its line. The plant will be one story and will contain 75,000 sq. ft. of manufacturing space. McPherson Co., Greenville, S. C., is the architect and engineer.

Bethlehem Throwing Co., Bethlehem, Pa. has been organized to take over the Goepp St. plant of Bethlehem Silk Co. Norman L. Christman is president of the new concern.

H. & F. Binch, Inc., Glens Falls, N. Y., is installing $120,000 worth of throwing machinery in its new plant.

Burlington Mills, Cramerton Div., is constructing a new warehouse and weave room at its Mayflower plant in Cramerton, N. C. A two-story addition that contains 33,000 sq. ft. will be constructed. The estimated cost is $240,000. E. R. Morgan, Gastonia, is the contractor.

Interstate Rayon Yarns, Inc., North Bergen, N. J., has changed its name to Interstate Yarn Mills, Inc. Louis Ginsberg is the president of the company.

KNITTING MILLS

Allan Hosiery Co., Inc., Philadelphia, Pa., has been incorporated at $100,000 to manufacture and deal in hosiery and other textile products.

B. H. Knitters, Inc., Philadelphia, Pa., has been incorporated at $25,000 to manufacture and deal in knit goods. F. Stanley Saurman, South-

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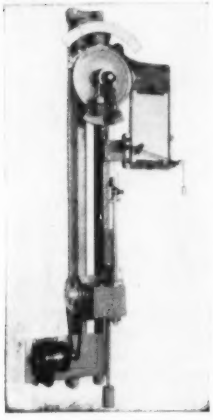

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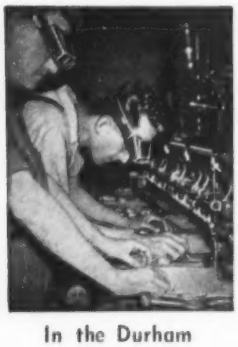

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News About **MILLS** (Continued)

ampton; Henry G. Canda, Jr., Wynnewood; and J. L. Wilsterman, Drexel Hill, Pa., are the incorporators.

Belton Hosiery Mills, Belton, S. C., a subsidiary of Julius Kayser & Co., is installing 16 additional full-fashioned machines. The company now has a total of 34 machines in operation at this plant.

Berkshire Knitting Mills, Reading, Pa., has begun the construction of a bridge between the third floors of two of its buildings. This bridge will allow the expansion of several departments. Finishing operations will be located at each end of the bridge.

Best Fit Hosiery Mill, West Des Moines, Ia., will begin the production of nylon hosiery soon in its new 48x80-ft. building at 4th St. and Grand Ave. John G. Archer is president of the new company. Karl Torgerson is vice president and secretary-treasurer.

Burlington Mills Hosiery Co. of Canada Ltd., Montreal, Que., will expand its Lachine, Que., plant. The estimated cost of expansion is $500,000. This expansion will enable the company to produce 66-gauge, 12-den. full-fashioned hosiery.

Catalina Knitting Mills is constructing a one-story, 17,000-sq.ft. plant in Whittier, Calif. The cost is $125,000.

Cedra Knitting Mills has begun production in its new mill in Cedra, Puerto Rico. Children's hosiery is being manufactured.

Crescent Mills, Madisonville, Tenn., has begun operations in its new plant located in the former Monroe Fair Administration Building. This firm also operates a mill at Niota, Tenn.

Dar-Mon Hosiery Mills, Inc., Charlotte, N. C., is installing two 51-gauge machines in its mill that were purchased from U. S. Hosiery Corp.

Dexdale Hosiery Mills, Lansdale, Pa., has installed several Wildman 75-gauge full-fashioned machines.

Diamond Hosiery Corp., New York, N. Y., has acquired a group of hosiery mills that were formerly controlled by Hamilton Hosiery Mills, Philadelphia, Pa. The transfer does not include the Hamilton Hosiery Finishers, Inc., Durham, N. C., which will continue to operate independently under the management of Lewis J. Farrell, Jr.

Esco Hosiery Co., Inc., is moving its office and shipping department from New York, N. Y., to 351 Atlantic St., Stamford, Conn.

Louis Gallet Knitting Mills, East Millsboro, Pa., is erecting an 18,000-sq.-ft. plant at Uniontown, Pa., in which its sewing, finishing and shipping departments will be concentrated. Emil Johnson, of Uniontown, is the architect and the Uniontown Construction Co. has been awarded the contract at $140,000.

Roy Good Hosiery Mill and **Holdgood Hosiery Mill,** West Hickory, N. C., have been consolidated in one building. Roy L. Good is the owner of both companies. A 7,000-sq.-ft. addition to the Roy Good mill has been completed and the Holdgood Hosiery Mill building has been vacated. The new addition will house 15 new knitting machines.

Graysville Hosiery Mills, Dayton, Tenn., has begun a branch operation at Pikeville, Tenn. Equipment has been installed in the present building. About 40 persons will be employed.

Harris Hosiery Mill, Galax, Va., is building a 60-ft. extension to its plant. The new addition will add 4,000 sq. ft. of floor space that will be used for warehouse space. A future expansion of manufacturing facilities in this area is being considered.

Highland Knitting Co., Springfield, Mass., is moving to a new location at 125 Main Street.

Imperial Knitting Co., Milwaukee, Wis., has purchased all assets of the Butte Des Mortes Sportswear Co., Menasha, Wis. T-shirt facilities will be moved from Menasha to Imperial's plant in Milwaukee.

Lambert Hosiery Mills, Lambertville, N. J., is planning to move part of its equipment to Doylestown, Pa., and part to Miami, Fla. Its Lambertville

TEXTILE WORLD

Reprints Available

▶ **Reprints of the following articles run in past issues of TEXTILE WORLD are available at the prices indicated. To order, write or use the coupon below, stating the titles of the reprints desired. Enclose check or money order payable to TEXTILE WORLD.**

SYNTHETIC-FIBER TABLE — **50¢ each, 40¢ in lots of 20 or more**
The latest (1953) edition lists by type and name all U. S. yarns and staple fibers in commercial production. A list of suppliers by type and form of fiber is also included. Valuable related data and a "Terminology and References" section are included. Comparative properties of wool and cotton fibers are included. An explanation of glass-fiber nomenclature and its yarn-numbering system makes conversion to cotton counts easy.

WOOL-SYSTEMS FLOW CHART — **35¢ each, 25¢ in lots of 20 or more**
New (1953) edition shows all the processes in making woolen and worsted fabrics on all yarn systems. Six typical finishing routines are also pictured to cover the main fabric types. The chart includes the manufacture of synthetic and blended fabrics on wool systems.

COTTON FLOW CHART — **25¢ each, 15¢ in lots of 20 or more**
An illustrated step-by-step process chart of cotton manufacturing from bale to finished fabric. Both principal and alternate flows are shown.

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Principal and alternate step-by-step processes in handling continuous filament yarns from the case of yarn to the finished fabric (including tire cord) are shown.

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The sequences of processes for the subdivisions of the knitting branch of the industry—women's hosiery, men's full-fashioned hosiery, half-hose, and knitted underwear and outerwear (circular and warp)—are shown and illustrated.

FELT FLOW CHART — **15¢ each, 10¢ in lots of 20 or more**
Manufacture of roll felts, sheet felts, and felt wheels is shown in step-by-step order.

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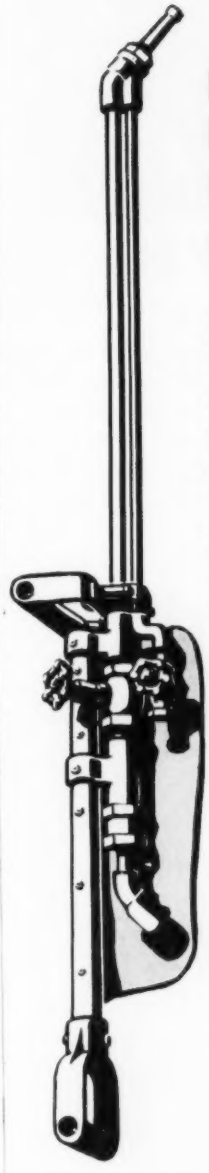

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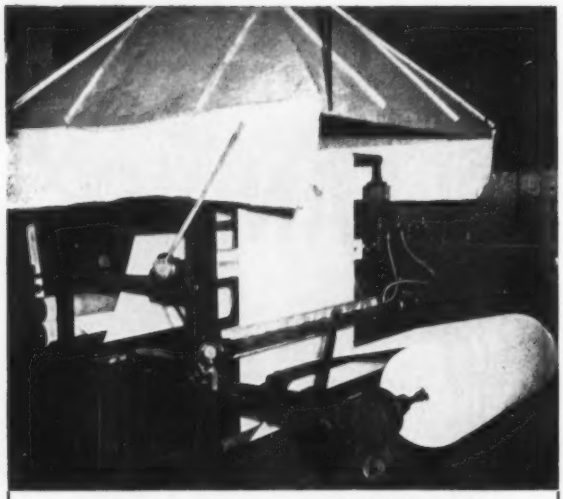

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News About **MILLS** (Continued)

plant has been sold to Coopers, Inc., Kenosha, Wis.

Lyerly Full Fashioned Mills, Hickory, N. C., is installing a new 32-section, 66-gauge full-fashioned hosiery machine in its plant.

March Mfg. Co., Prattville, Ala., expects to begin operations soon in its new plant that was recently completed.

Peerless Hosiery Co., North Wilkesboro, N. C., plans to construct an additional building on an adjoining lot.

Powell Knitting Mills, Spartanburg, S. C., has returned 65 argyle flat knitting machines to its plant at Norristown, Pa. The company recently purchased 200 new Bentley circular knitting machines.

Sand Knitting Mills Co., Chicago, Ill., has been superseded by a new corporation called Sand Knitting Mills Corp., and operations have been transferred to Berlin, Wis.

Sanson Hosiery Mills, Inc., Philadelphia, Pa., is moving its executive offices from Philadelphia. All production except for a small plant in Sieversville, Tenn., will be concentrated in Sanson's plants at Meridian and Corinth, Miss.

W. Y. Shugart & Sons, Fort Payne, Ala., has awarded a $100,000 contract to Stone Construction Co., Decatur, Ala., for a new hosiery mill in Fort Payne. Darcy T. Tatum, Jr., Birmingham, Ala., is the architect.

Tennessee Knitting Mills, Columbia, Tenn., has installed a 66-gauge machine in its mill.

DYEING AND FINISHING PLANTS

Beltex Hosiery Co. has moved its finishing plant and offices from 13 Hopkins Pl., Baltimore, Md., to new and larger quarters at 4 S. Howard St.

Burlington Mills Corp., Asheboro, N. C., will put its new half-hose finishing plant into operation late this fall.

Colgate Piece Dye Works, Hawthorne, N. J., and **Trutex Holding Co.,** Paterson, N. J., have merged under the name of the former company. Samuel Schwartz is the president.

Cowan & Shain Co., Haverhill, Mass., has acquired 150,000 sq. ft. of manufacturing space in the former Pentucket Mill.

Goodman & Theise, New York, N. Y., owner of Stafford Printers, Inc., has purchased the plant formerly belonging to Rhode Island Worsted Co. at Stafford Springs, Conn.

Jefferson Bleachery, Inc., Chesterfield County, S. C., has been granted a South Carolina charter. The new company is capitalized at $200,000. Cary C. Bohamer, of Clover, S. C., is the president.

Ohio Falls Dye & Finishing Works Co., Louisville, Ky., has changed its name to Ohio Falls, Inc.

Roanoke Mills, Roanoke, Va., will construct a 72x100-ft. addition to its plant that will house the dyeing and drying operations.

Robbins Mills, Inc., Clarksville, Va., is installing additional worsted-finishing equipment for its Dacron-worsted blend program. The new equipment will cost about $650,000.

Silver Knit Hosiery Mills, High Point, N. C., has begun operations in its new $180,000 yarn dyehouse.

Skyland Hosiery Mills' plant at Forest City, N. C., will be known officially as Forest Hosiery Co. Milton C. Henry is the plant manager. The plant finishes and packages children's and misses' anklets.

Skyland Textile Co., Sylva, N. C., is nearing completion of a new building that will house the company's new $450,000 plant. The building is being erected by Jackson County Industries, Inc.

Star Dye Co., Dayton, Ga., is erecting a 40x60-ft. addition that will permit an increase in its finishing capacity.

Topsall Dyeing & Finishing Co., South Attleboro, Mass., recently increased its capital for general operations.

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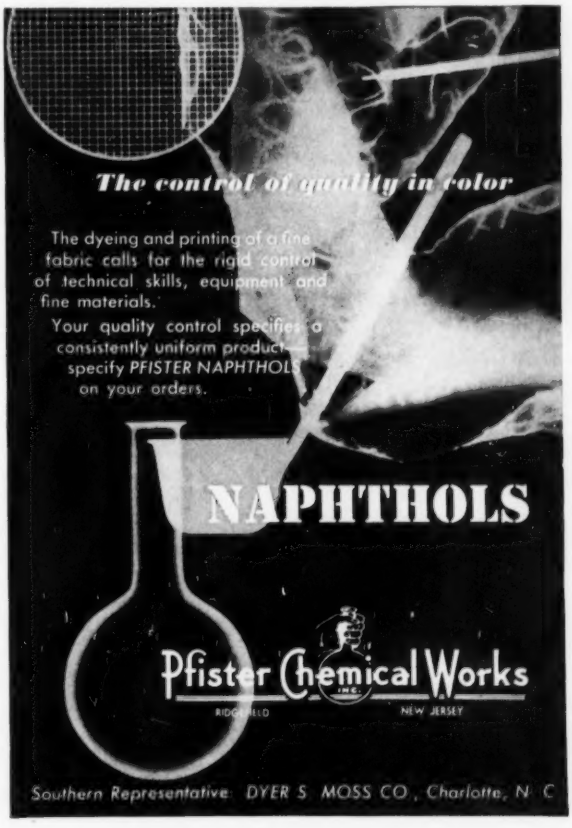
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NEWS ABOUT *Men*

Thomas E. Abendroth has resigned as plant manager of Warren Narrow Fabrics Co., Warren, R. I., a subsidiary of Phillips-Jones Corp. **John Williams** will succeed Mr. Abendroth.

Henry Allen, Jr., has been named overseer of finishing at Worcester Spinning & Finishing Co., Cherry Valley, Mass.

William O. Allison has been named comptroller of Reeves Bros., Inc., New York, N. Y.

J. Ames has resigned as assistant manager of Rockland Bleach & Dye Works, Baltimore, Md.

Fred Andrews has been named dyer at Chateau Dyeing & Finishing Co., Huntingdon, Que.

Edward Barnes has resigned as assistant superintendent at Naumkeag Steam Cotton Co., Salem, Mass.

John P. Baum has been appointed executive officer of M. T. Stevens & Sons Co., New York, N. Y., in addition to his duties as executive officer of the company's Southern Div.

P. G. Baxter has been named superintendent at Seymour Woolen Mills, Inc., Seymour, Ind., succeeding **Williard Bishop**, who has resigned.

John M. Bean, Jr., has been appointed personnel director of Textron, Inc., plants at Williamston, Belton, and Honea Path, S. C.

Hugh Beard has been transferred to the New York office of Burlington Mills Corp. Mr. Beard was formerly in charge of fabric development at Burlington's Tricot Div., Burlington, N. C.

Clifton G. Bishop has been promoted to manager of Textron's Peerless Plant, Belton, S. C. He was formerly superintendent of the company's plant at Williamston.

Edward W. Blackwood has resigned as division superintendent of the Efird Div. of American & Efird Mills, Inc., Albemarle, N. C.

LEROY J. MAINE has been named resident manager of the Virginia Fibre Corp., Petersburg, Va.

Roger Bodelle has been named assistant superintendent in charge of sorting, scouring, carding, combing, and the French system at the top mill of Botany Mills, Inc., Passaic, N. J.

J. N. Bouffard has been named overseer of carding at Dresden Mills, Inc., Dresden, Ohio.

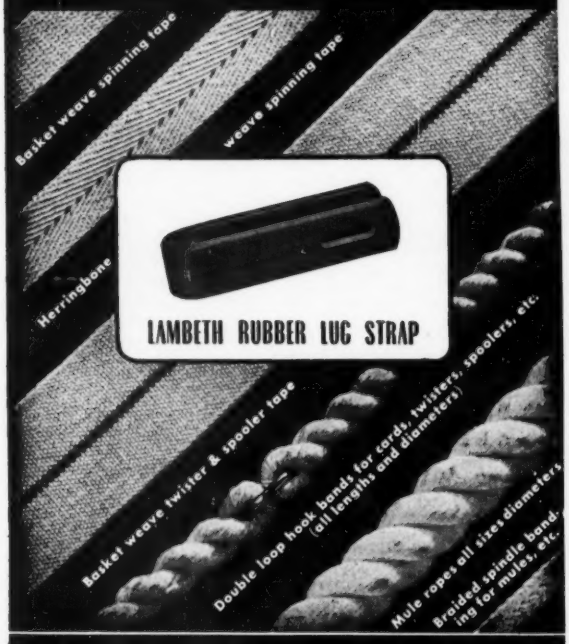
C. H. Boyce has been appointed superintendent of Almardon Mills, Lonsdale, R. I.

E. Bressette has been named overseer of dyeing at Jefferson Woolen Mills, Knoxville, Tenn.

Nelson Briggs has been appointed carding foreman at Albany Felt Co., North Monmouth, Me. He succeeds **Allen Curtis**, resigned.

Hollis Brown has resigned as overseer of carding at Cascade Woolen Mill, Oakland, Me. He has been succeeded by **Warren Butterworth. John Boston** has resigned as overseer of finishing and has been succeeded by **Don Higgins.**

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING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weave spinning tape
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Braided spindle banding for mules, etc.

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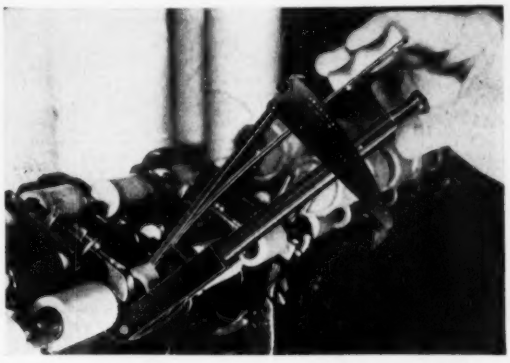

Just insert tangs under center of top roll, squeeze handles lightly—leverage does the work—and the load weighing in terms of pounds is shown on the scale.

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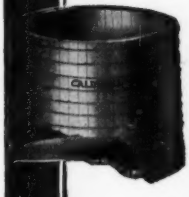

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News About MEN

(Continued)

Ritchie Buchanan is now with Lee Dyeing Co., Johnstown, N. Y., as an overseer in one of its dyeing departments.

O. J. Byron has resigned as overseer of scouring at Lobsitz Mills Co., Nutley, N. J. **John Cignarella** has succeeded Mr. Byron.

Lawrence E. Cash has been named overseer of weaving at Royston Mills, Inc., Royston, Ga.

Wayne D. Cash has been promoted to foreman in charge of twisting operations at the Statesville, N. C., division of Seminole Mills. Mr. Cash will work under **James F. Barker**, general overseer of spinning, coning, and twisting.

Raymond F. Clark, vice president in charge of the industrial-products division of Hess, Goldsmith & Co., New York, N. Y., has been elected a director.

Joseph C. Cobert has resigned as vice president in charge of quality control at Hugh Grey Hosiery Co., Concord, N. C.

John Cresswell, assistant resident manager of Collins & Aikman Corp.'s Plant B, Philadelphia, Pa., has been made resident manager of the company's Plant J, Bristol, R. I. He succeeds **Morris Einstein**, retired.

W. A. Critchley has been named secretary-treasurer of Spinrite Yarns & Dyers Ltd., Listowel, Ont.

Harold G. Dean has joined Glen Raven Mills, Glen Raven, N. C., as assistant to **R. Sidney Flood**, general sales manager. Mr. Dean was formerly with Paul Whitin Co., Northbridge, Mass.

Frank Deidrich has been named general manager of Dodgeville Finishing Co., Inc., Attleboro, Mass. He succeeds **Fred B. Hirsch**, who will remain with the company in an advisory capacity.

O. H. Demers has resigned as overseer of dyeing at Blue Swan Mills, Sayre, Pa. He has been succeeded by **Henry Geiger**.

Richard M. Everett has retired as manager of the Industral Fabrics Dept. of the Cotton and Rayon Div. of Pacific Mills, Boston, Mass. He will continue as a consultant in product development for this department.

J. A. Ferguson, superintendent of the Ottaray Plant of Monarch Mills, Union, S. C., has been transferred to superintendent of the company's Lockhart plant, Lockhart, S. C., succeeding **Chris Super. Horace L. Pratt, Jr.**, succeeds Mr. Ferguson at Ottaray.

L. K. Fitzgerald has been named general superintendent of Dan River Mills, Danville, Va. Mr. Fitzgerald succeeds **Raymond Henderson**, resigned.

Arthur J. Gagnon, Jr., has been named overseer of drawing for Crown Worsted Mills, Inc., Providence, R. I.

Roy Gavitt has been appointed superintendent of the finishing division of Verney Corp., West Peterboro, N. H.

E. J. Gernt has resigned as general manager of the Virginia plant of Schwarzenbach-Huber Co.

E. C. Gertzman has resigned as comptroller of the Aragon Mills Div. of A. D. Juilliard & Co., Inc., Rockmart, Ga.

F. E. Grier, president of Abney Mills, Greenwood, S. C., has been elected chairman of the board of Erwin Mills, Inc., Durham, N. C. Mr. Grier succeeds the late **Kemp P. Lewis.**

Robert L. Gross has been promoted to assistant testing engineer of the Research Division of Callaway Mills, LaGrange, Ga. to assist **W. P. Cofield, Jr.**

Jack Harris has been appointed assistant to D. O. Carpenter, manager of the Oakland Plant of Kendall Mills, Inc., Newberry, S. C.

John Herrmann has been appointed superintendent of Caron Spinning Co., Robesonia, Pa., succeeding **Ernest Moss.**

W. C. Hines has been

News About **MEN** (Continued)

W. F. BIRD has been elected president of Collins & Aikman Corp., New York, N. Y. Mr. Bird succeeds Albert R. Jube, who is now chairman of the board.

named overseer of weaving at Magnolia Textiles, Inc., Magnolia, Miss.

Harry C. Jackson has retired as vice president and a director of A. D. Juilliard & Co., Inc., New York, N. Y.

William Jacques has been appointed overseer of slashing and warping at Crown Mfg. Co., Pawtucket, R. I.

C. W. Johnson has been named overseer of the No. 2 weaving department at Spartan Mills, Spartanburg, S. C. **J. T. Delmar** has been promoted to general overseer of the second shift. **Harry Barnes** has been promoted from loomfixer to second hand of weaving on the third shift.

David R. Johnson has been elected president of Atwater Hosiery Mills, Yanceyville, N. C. He succeeds **Roy V. Atwater. William B. Atwater** was named vice president.

T. C. Jolly, III, has been promoted to superintendent of Drayton Mills, Spartanburg, S. C. **Elton D. Grenshaw** has been named production manager. Mr. Jolly succeeds **J. B. Tollison,** resigned.

Eldon Lawson has been named general production manager for Rudin & Roth, New York, N. Y., succeeding **Milton Silver.** He was formerly general manager for Rambo & Regar Hosiery Mills, Norristown, Pa.

E. Ledoux has been named overseer of carding at Elmdale Mills, Uxbridge, Mass. He formerly was with Wyandotte Worsted Co., Central Village, Conn.

John Lodge, II, has been named superintendent of the new American Woolen Co. plant now under construction at Tifton, Ga.

Edmund Magner has been named overseer of dyeing on the third shift at Webster Mills of American Woolen Co., Webster, Mass.

Charles H. Mays has been appointed night superintendent for L. B. Lockwood Co., Cleveland, Ohio.

Joel McCannon has been appointed superintendent of yarns at Faith Mills, Averill Park, N. Y.

J. R. McFadden has been named night overseer of drawing at M & F Worsted Mills, Inc., Providence, R. I.

Wilbur M. McFeely has been elected a vice president of Riegel Textile Corp., Ware Shoals, S. C.

Richard Merrill has been named overseer of carding for Faulkner & Colony Mfg. Co., Keene, N. H.

Clarence Mesirou has resigned as treasurer of Ashton Mills, Inc., Lenni Mills, Pa. **James R. McClasland, Jr.,** will succeed Mr. Mesirou.

Robert Minnich has been appointed designer at Lorraine Mfg. Co., Pawtucket, R. I.

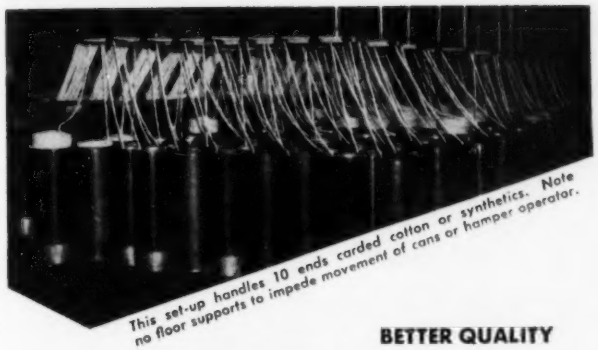
Robert Missle has been promoted to overseer of bleaching on the second shift at HoHo-Kus Bleachery, HoHoKus, N. J.

F. N. Moore has been promoted to overseer of weaving at Opelika Mfg. Corp., Opelika, Ala.

Fred W. Noechel has resigned as research director of Goodall-Sanford, Inc., Sanford, Me.

Charles Pendergast has been named overseer of carding at Mechanicsville Yarn Co., Mechanicsville, N. Y.

J. B. Powell has been appointed superintendent of Locke Cotton Mills Co., Con-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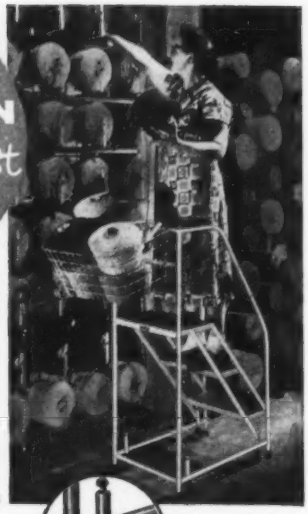

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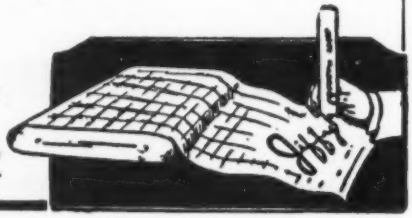

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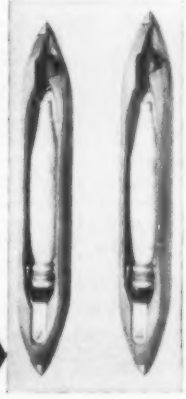

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News About **MEN** (Continued)

cord, N. C. He succeeds **Frank K. Peatrea.**

Henry E. Rauch has been elected to the board of Burlington Mills Corp., Greensboro, N. C. **Charles F. Myers, Jr.,** has been elected treasurer, succeeding **C. E. Rowe,** resigned. **R. E. Osmer** has been elected assistant treasurer.

W. L. Reese has been named superintendent of weaving at Huntsville Mfg. Co., Huntsville, Ala.

Wilfred Rochon has resigned as overseer of dyeing at Atlantic Mills, Providence, R. I., to accept a similar position with Collins & Aikman Corp., Bristol, R. I.

R. L. Rogers has been elected president and director of Textron Puerto Rico, San Juan, P. R., succeeding **E. C. Whitmore. L. W. Musher** and **Daniel F. Kelley, Jr.,** were elected directors.

R. L. Rousselle has resigned as overseer of spinning at Bates Mfg. Co., York Div., Saco, Me. **Edward Barnes** succeeds him.

Harrison B. Rue has been promoted to branch manager of Chase Bag Co., Buffalo, N. Y.

D. Sawtelle has resigned as carder at Kenwood Mills, Cavendish, Vt., to return to Sawyer, Regan Co., Dalton, Ga.

Robert G. Sharpe, overseer of weaving at the Granby plant of Pacific Mills, Columbia, S. C., has been promoted to assistant superintendent in charge of weaving at the same plant.

Col. John R. Simpson recently resigned as a director and the chairman of the executive committee of Sidney Blumenthal & Co., Shelton, Conn.

Sam T. Snoddy has been named president and general manager of Carolina Mills, Inc., Dillon, S. C.

Abbot Stevens has retired as vice president of J. P. Stevens & Co., Inc., New York, N. Y.

OBITUARY

Richard L. Anderson, 68, master mechanic at Pacific Mills, Columbia, S. C.

Frank A. Cook, 43, manager, Industrial Relations Div., Carter Fabrics Operating Group, J. P. Stevens & Co., Inc., Greensboro, N. C.

Dr. Lorenzo T. Gregory, 83, a director of Springs Cotton Mills, Lancaster, S. C., and one of the organizers of the Kershaw Plant, Kershaw, S. C.

George Hodges, 49, superintendent of the printing division of Southern Bleachery & Print Works, Inc., Taylors, S. C.

Herbert Eugene Jenkins, 68, retired superintendent of Superior Yarn Mills, Mount Holly, N. C.

John A. Korschen, 90, retired vice president and general manager of Chipman Knitting Mills, Easton, Pa.

Leo Layden, 73, retired superintendent of Eaton Knitting Co., Ltd., Hamilton, Ont.

H. William Logan, mechanical superintendent of the Cornwall and York Cotton Mills Co., St. Johns, N. B.

Joab Maynard, 59, foreman at Eaton Knitting Co., Hamilton, Ont.

John B. Mitchell, 75, former superintendent of Belton Mills, Belton, S. C., and Carolina Mills, High Shoals, N. C.

Col. J. Burton Mustin, 78, retired president and chairman of the board of Stratford Knitting Mills, Linfield, Pa.

Erskine Ramsey, 88, a member of the board of Avondale Mills, Sylacauga, Ala.

William Wilmot, 53, overseer of dyeing at Putnam Finishing Co., Mechanicsville, Conn.

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2—Blickman Stainless Steel Enclosed Dye Kettles 4½' wide. 1948.
1—Morrison Pneu. Padder 70", 40 ton, 3 rolls, 1949
1—Rodney Hunt Pneu. Padder 72", 10 ton, 2 rolls, 1946
1—Birch Scutcher 70", with Cook Detwister
1—Proctor & Schwartz Hurricane Pin Tenter Dryer, 15' long, 5 passes, 74" wide. 1944.
2—Parks & Woolson Shears, Model A, 66" wide. Tandem
1—Voelker Rotary Press 66" wide, swing folder, 1949
1—Parks & Woolson Semi-Decater, 72", blanket and pump
1—Windle Cloth Measurer & Winder, 1952.
1—Cottage Steamer, 18' long x 90' wide, 2 conveyors

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1—Van Vlaanderen Pneu. Embossing Calender 54", 9 ton, 1952.
1—Portland Enclosed Stainless Steel Dye Box 14' wide, 1951.
1—Van Vlaanderen Hydraulic Calender 60", 4 rolls, 40 ton.
1—Rodney Hunt Tensitrol Washer, 5 compts, 60" wide. 1948.

56—Crompton & Knowles W3 Looms, 82" wide, motor, 1946-49.
20—Crompton & Knowles W3 Looms, 82" wide, motor, 1952.
200—Draper XD Looms, 44" cloth, 20 harness dobby, motor.
60—Crompton & Knowles C4 Looms, 78" B.S., 20 harness, 1948.
200—Crompton & Knowles C5 Looms, 56" B.S., 16 harness, 1950.

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1—48" Parks & Woolson Semi-Decater.
6—Tillinghast Portable Sewing Machines.
1—Miller Co. Pin Dryer 1946.
1—Proctor & Schwartz Hurricane Skein Dryer.
1—60" 2 Roll Morrison Quetch.
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Employment Advertising - pages 304 & 305

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1 P. & W. DOUBLING, WINDING AND MEASURING MACHINE, 66", 1949 Model, M.D.
1 NATIONAL LOOP DRYER, Revolving Aluminum Sticks, Asbestos covered, 104" wide, Aluminum Housing, Fin Heaters, 1948 Model, M.D.
1. R. HUNT DYE KETTLE, S.S. Enclosed, 14', M.D.
1 Fletcher EXTRACTOR, 20", S.S. Basket, 1945 Model, M.D.
2 C. & M. FOLDERS, one yard, 55"-66" on Jaws, M.D.
2 C. & M. CEILING SWING FOLDERS, 90", Adjustable, Gear Driven, M.D.
1 C. & M. INSPECTING MACHINE, 96", Inclined Table, Reverse, Gear Driven, M.D.
1 Hermas MEASURING MACHINE 48", Reversible, For Tube, M.D.
1 D. & F. D.A. NAPPER, 24 Roll, 86", Double Belt Drive.
2 Gessner D.A. NAPPERS, 18 Roll Units, 78"-90", M.D.
1 D. & F. KNIT GOODS NAPPER, 20 Roll, 80", Turning Arms for Tubular Cloth.
1 SQUEEZE SET, 3 S.S. Rolls, B.B. 60-¾" Face x 10" Dia.
2 SQUEEZE SETS, 2 Rubber Rolls 18" x 18", Friction Clutch and Pulley Drive.
1 Birch TACKING MACHINE, 86" with Sewing Head, M.D.
1 Textile CLAMP TENTER FRAME, 90' x 108" Width, S.S. Inserts, Power Opener, M.D.
2 Cook SLACK LOOP WASHERS, S.S., 180" Width Unit, M.D.

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1 P. & S. Iron, Single Cylinder CARD, 60", with Double Doffer.
10 D. & F. SHODDY CARDS, Iron Cylinders, 48" x 60" Dia., Closed Bearings, Automatic Feeds, Bat Takeoffs.
2 D. & F. SAMPLE CARDS, 11" x 16" Dia. Cylinders with Stands, M.D.
12 SCHLUMBERGER DELETE WOOL COMBS, Adjustable Rolls.
1 D. & F. TAPE CONDENSER, 60" Single Rub, 4 Bank, 96 Ends.
1 Hunter RAW STOCK DRYER, 6 Section, Detachable Type, 60" on Apron.
1 Hunter CONE DUSTER, 6' Feed Table and Feed Rolls, M.D.
1 Harwood PICKER FEED, 60", Inclined Pin Apron, approx. 67" long.
1 Hunter GARNETT, 30" x 60", B.B., 5 Cyl., Feeder and Lap Takeoff.
6 Hunter GARNETTS, 2 Cyl., 20" x 60" B.B. Double Doffers, Auto. Stationary Lappers, Floor Apron, Slitter, etc.
1 P. & S. Camel Back LAPPER, 56" wide, running out Table 88" long.
6 C. & K. W3 LOOMS, 76", Auto. 26 Harness, M.D.
24 C. & K. W2 LOOMS, 82", Auto. 20 Harness, M.D.
24 C. & K. W1 LOOMS, 82", Auto. 25 Harness, M.D.
12 C. & K. Auto. LOOMS, 92", 25 Harness, M.D.
4 Gerry LUMPERS, B.B. 44", with Feed Aprons.
1 C. & M. Fearnaught PICKER, 48", Workers, Strippers, Doffer and Feed Apron.
1 D. & F. Iron Fearnaught PICKER, 48", Workers, Strippers, Metallic Apron.
8 S. & L. RAG PICKERS, B.B., 18" x 40" Cyls., Feed Tables, Adj. Frames.
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24 FLETCHER DOUBLE DECK TWISTERS 1 LB. PACKAGE

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PUT YOUR PIN TENTERS IN TIP-TOP CONDITION
SEND US OLD PLATE FOR QUOTATION
• Pins in Stainless, Monel, Plain Steel.
All Diameters Any Length
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COMPLETE SPINNING-MILL
For cotton and woolen coarse yarn
Available in Puerto-Rico
8 Furbush Cards, 6 Johnson and Bassett mules, 4 Saco-Lowell twisters, etc.
Cement Building of 36,000 sq. ft.
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MOTORS—GENERATORS—TRANSFORMERS
New and Guaranteed Rebuilt
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54" 4x4 C & K with 2 warpers, 2 winders, 4 quillers.
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Increase production . . . SAVE on machinery cost
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NEW & LIKE-NEW EQUIPMENT AT A FRACTION OF ORIGINAL COST!

NEW ATWOOD UNIRAIL MOD. 501 - DEL. DECK

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18—184 spindles each. Erected, but NEVER USED. Brand new take-up shafts, spindle bobbins and stainless steel bobbin trays for Nylon.

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60 spindles each. Complete with motorization. 1 lb. pkge. 7" traverse, 12" spacing. Bakelite Nylon bobbins. Self-stacking racks.

18—Fletcher 15'8" Cam Motion LOOMS

Motorized. Complete with choice of battens and other accessory equipment. Excellent condition.

50—Foster 75A NYLON CONERS

Roller bale pineapple attachments. Gear gain. Motorized. In excellent condition.

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Like-New Condition. Loaded With Accessories

Complete with beams, heddles, quills, harness frames, etc. 56" between swords. 2 x 1 box. 20 harness Dobbies 15/32 gauge index. 1 HP G.E. motor. Roller bearings crank and bottom shafts. Warp stop 6 bank KA elec. 3 shift Veeder Root pick counters and cut meters.

12—Universal #50 Covers for Nylon
Rebuilt. Roller bale pineapple attachment. 3-30 gear gain boxes. L-drive. Anti-wear tensions. Motorized. 6 spindles per machine.

1—1946 COCKER WARPER
For 21 x 21 beams. 14 yard let-back, rheostat and variable speed drive. Motorized.

8—1948 Atwood Mod. 110 1 Lb. D.D. TWISTERS
Complete with bobbins. In excellent condition.

120 SPINDLES 1952 UNIVERSAL #250 Nylon Sizing Machines

28—1947—72"—5-6 LOOMS
2 x 1, 20 harness. Motorized. In excellent condition.

1 Lb. PKGE. SPOOLS
30,000 Bakelite 10-B Twister Spools—3 1/2" head 6" Trav. 1 3/4" Barrel. 100,000 Fibre Redraw Spools—3 7/8" head 4 1/2" Trav. 1 1/2" Barrel

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For Sale!

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"The Machinery Man Known Everywhere"
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1—3 Roll 68" Hydraulic 30 Ton Calender M.D.
1—3 Roll 65" V. V. Calender M.D.
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2—58" Hermas Meas. & Inspect. with reverse. Like new $350.00 each.
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4—10' S.S. Dye Becks, Motor—$700.00 each.
2—8' S.S. Dye Becks, Motor—$600.00 each.
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1—V.V. 48" Decatizer, Pump, Motors & Blanket—$2000.00.
1—V.V. Tenter Frame,—50'—S.S. Clips—closed gears, M.D.
1—V.V. 3-Roll Calender 45"—$1800.00 M.D.
3—Beamers 76"—55"—50"—$150.00 each M.D.
2—Copper Jacketed Mixers, 200 gal. & 75 gal.—$300.00 & $150.00 M.D.
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1—Merrow Sewing Machine—60—3 DB.
3—Extractors, 2—60", 1—48"—$600.00 each M.D.
1—V.V. 50" Scutcher—$1000.00 M.D.
3—76" all S.S. Jiggs—$750.00 each.
1—V.V. 64" Palmer, Quetch & Blanket M.D.
6—Textile Squeeze Sets, 96" long, 2 Rubber Rolls 19" & 12" Dia. roller bearings.
1—set 23 Copper Dry Cans—60" x 23".
1—set 15 Copper Dry Cans—64" x 23" M.D.
1—set 8 Copper Dry Cans—84" x 23" M.D.
1—set 9 Copper Dry Cans—72" x 23" M.D.

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DYEING AND FINISHING MACHINERY

Located at Celanese Corporation, Cumberland, Md.

28—All stainless steel dye jigs 50"-60", S. S. idler rolls and tilting expanders, motor driven.

24—Stainless steel dye becks 8'-12', S. S. reels, rake beams, pony reels, motor driven.

1—Tenter frame 75' long x 104" wide, elect. guiders. Vari speed drive.

1—Pin tenter frame 60' long x 58" wide, late attachments, with 35' housing.

1—Pre dryer, 10½' long x 7½' wide.

1—Jacketed Palmer, 68" wide, ball bearing, blanket, with 2 roll quetch and heating, motor driven.

1—Hydraulic 3 roll finishing calender, 80" wide, 1950 model.

1—Embossing calender, 2-54" rolls, lever pressure, silk type, motor drive.

1—Hydraulic embossing calender, 2-54" rolls, 9" and 18" dia., pump, accumulator, motor.

1—60" 2 roll calender, pneumatic press., 14" and 20" dia. rolls, vari speed drive.

1—Moire calender, 2-52" gas heated rolls, 12" dia. anti-friction bearings, motor driven.

2—Moire tracers, 52", motor driven.

1—Boil-off machine, 2 section, with pumps and motors.

2—Calender roll grinders.

650—Aluminum shells, 50" wide, 1⅛" sq. bar.

5—Hermas tubing, measuring and examining machines, motors.

20—Stainless steel dye house trucks.

2—60" shearing machines, 4 blade, motor driven.

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WHITIN AUTO. QUILLERS WITH KIDDE TENSIONS	S-3, 2x1, 56" R. S. AUTO SHUTTLE CHANGE
COCKER 9-DRUM SLASHER	C&K 2x1, 54" R. S. AUTO BOBBIN CHANGE
ATWOOD 10B TWISTERS	COCKER TRICOT BEAMER, 1952
TERRELL BOBBIN STRIPPER	

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65" ATLAS PNEUMATIC TWO ROLL PADDER

12 Ton Pressure, Rubber Rolls 12" dia., Dancing Roll Compensator, Slip Belt Batcher, Stainless Steel Pan, 3" Immersion Roll, Air Compressor, Motor Drive.
Air Compressor is Westinghouse "Air Brake" Type G, Max. WP 165 Lbs., ½ HP Motor, 1725 RPM, 115/220/1/60.
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We will sell all or part.

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1—60 spdl. Atwood winder spindleless.
1—OL20 Spdl. Cop winder 20 spdl.
1—OL20 Spdl. Cop winder 30 spdl.
1—15 spdl. Lazenby winder
1—36" Chenille cutter
Universal #50 coners

AMBLER TEXTILE MACHINERY CO.
S.E. cor Bodine & York Sts. Phila. 33, Pa.

For Sale—LOOMS

12 C&K, Type W-3 looms.
Excellent condition. New 1939.

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TO HELP YOU...
find equipment you need
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COMPLETE RAYON SPINNING UNIT

Installed in 1951 and 1952
Saco Lowell—Latest Type

Includes Opening, Picking, Carding, Drawing, Roving, Spinning, Coning, Winding, and Laboratory Equipment.

6336 Spindles—Saco Lowell Z-2 WW Frames
24 Frames of 264 Spindles Each
2½" Ring, 4" gauge and 9" Traverse

USED EQUIPMENT—AVAILABLE IMMEDIATELY

SACO LOWELL COTTON SLASHER **Item SLCS-E**
Complete with auxiliary equipment
54½" Standard Width—Beam Type

HUNTER CARBONIZING TANK **Item HCT-J**
Lead-lined Cypress Tank
Fittings acid resisting metal
Nip Rolls rubber covered 90" wide—never used

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New 1948—Used 3 Months
68" Working Width

WHITIN QUILLER—MODEL J **Item L-WQ**
304 Spindle—3½" Gauge—10½" Traverse

4 BLADE HERMAS SHEAR **Item HS-SC**
80" Working Width—New 1951—Electric Driven

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Will buy your surplus and obsolete dyes and chemicals for cash.
NEW ENGLAND PRODUCTS CO.
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Established 1919

WANTED—1 Woolen Cloth Winding and Folding Machine
To handle cloth up to 62" width. Must be good condition. Quick delivery.
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Janesville, Wisconsin

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330 West 42nd St., New York 36, N. Y.

WANTED
Used Smith & Furbush 36" Jute Picker with shell feed.
W-9014, Textile World
330 W. 42 St., New York 36, N. Y.

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8—Harwood, Sargent 36"—48" Picker Feeds
2—60" Card Feeds
6—D. & F. & Sargent 6, 12 Bar Mixing Pickers
2—48" D. & F. Fearnought Pickers
6—18"—24" Shoddy or Waste Pickers
2—36"—48" Burr Pickers
2—Dusters, Cone or Box type
3—18"—36" Ceiling Condensers

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UNIVERSAL 50's & 80's REBUILT
1—Foster Mod. 12 Skein Winder
1—Foster Mod. 101 Cone Winder
1—Sargent 16 sp. Ball Winder, 1948
1—Globe Ball Warper
4—D. & F. Pin or Pinless Warper

FINISHING
2—Butterworth 66" 3 roll Padders
1—Gessner Mod. 20 Press, 1950
1—P. & W. 72"x36" Semi Decater, 1948
1—Set (6) Copper Dry Cans, 70"x36"
1—Wetting-Out Tank, S/S Lined, 62"
1—P. & W. 72" Steam Luster Machine
1—Crab, 3 bowl, 72", Yorkshire Type
2—Birch Doub. & Tack. Mach., 92"
2—Teasel Gigs, Doub. Cyl., 60"
1—P. & W. 4 cyl. Brush, 66"
1—P. & W. Cloth Doubler, 66"

MISCELLANEOUS
1—72" Latex Coating Machine
1—P. & S. Cyclone Dust Collector, 1949
1—Nash No. 4 Hytor Pump
1—Singer Overlocker

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100—¾ H.P. 550V " " 1800 RPM
20—New 1 H.P. 550V " " 1200 RPM
Switches—Stafford Cutters, Beams, Let-offs
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17—4X1 Box Motions for Silk Box Looms New in original cases
56—"XD" 50" Looms 1952—Diehl Drive—Steel Beams
52—"E" 40" Lacey Top ½ H.P., El. Stop Motion
64—"XK" 44" ¾ H. P. Spring Top
57—"K" 42" Dobby ½ H.P. El. & St. Bar
168—"55" 56" B.S. 1½ H.P. 550 V 25H Dobby 1941
96—W2 92" 1½ H.P. 550V El. Stop Motion —List constantly changing—
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2—Roving Bobbin Strippers 1—Waste Opener

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24 XK AUTO DRAPER LOOMS 52½ R.S.
12—S5 CK AUTO LOOMS 60" R.S.

4—Tricot Machines 168 in.
1 3 Color 60" Print Machine
3 Hercules 48"-60" Extractor
300 Auto Drapers 43" to 76" cloth
16 C&K Auto Bob Changers 2x1—72" R.S.
12 C&K 4x4—54"—R.S.
40 C&K Woolen Looms 72" to 110" R.S.
1000 Electro Rods 66" to 133"
1 V.V. 40'-60" Tenter Frame, Enclosed Gears
1 V.V. 60'-66" Palmer Tenter, Unit, Complete
1 36" Self Balancing Extractor
1 W&J Tenter Frame 90" W 30' L
1 W&J Tenter Frame 54" W 30' L
1 2 Roll 60" Quetch—V.V.
1 Set of 8—68" Copper Cans
1 60" wide Pin Tenter Frame 60'—W&J
6 Dye Boxes S.S. lined 8'—10'—12'
1 Jostrom fabric conditioner 64"
1 19 can Butterworth dryer 72"
3 V.V. Button Breakers 1—60" 2—50"
4 Three (3) Roll Padders 45"
30 50" Dry Cans
4 Johnson Slashers—7—5—3 Can 66"
2 90" S.S. Jiggs
4 50" S.S. Jiggs
1 72" Greige Washer with Squeeze Rolls 24' long
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9 Atwood Single Deck Utility Spinners
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20 ±90 Universals
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1—20 Spindle Universal Roto-Coner—1947
4—N.E.B. Braiders, 24 Carrier
24—Whitin Cotton Cards 40"—1948
4—Whitin Twisters, 160 Spindles, 4½" gauge—1938

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100—NO. 50 UNIVERSAL CONERS GEAR GAINERS "A"—"L" DRIVES S. S. ROLLS—TROUGHS—PINEAPPLE
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3—FLETCHER REELING MACHINES
100—UNIVERSAL & FOSTER SIZING MACHINES
1—80 SPINDLE SIPP D.H. WINDER—6" OVEREND SPOOLS
SPOOLS—BOBBINS—QUILLS—ALL SIZES & TYPES

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Complete to Run.
Includes 168" insides, complete with motors V. Belt drive. Includes two sets of 15 ft. beams also one Lebernecht same as above except it is adaptable to 3 Bar Knitting. All set for 150 R.P.M.
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TRICOT PLANT
In full operation, twelve S & R 168" knitting machines. Full complement warpers, beams, etc. MID-SOUTH location. Good labor area—
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TEXTILE ENGINEER, alert, experienced in manufacturing synthetic fabrics, processing, developing, and planning including quality and cost control. Sales promotion minded. At present employed. Married, able to adjust local or foreign surroundings. PW-8896, Textile World.

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(Continued from pages 299-304)

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330 W. 42 St. New York 36, N. Y.

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Familiar with Carpet Manufacturing Machinery.
One with imagination and knowledge necessary to design, direct development and improvement of equipment as well as manufacturing processes.
Splendid opportunity for right man.
Write in strict confidence, giving age, educational background, and complete history of your experience.

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PhD, 3-5 years experience in colloid chemistry, for research in dyeing and finishing.

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So make a date with your Red Cross, Armed Forces or Community Blood Donor Center. *One* hour and you're on your way.

BUSINESS EXECUTIVES CHECK THESE QUESTIONS

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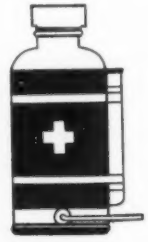
- ◯ HAVE YOU GIVEN YOUR EMPLOYEES TIME OFF TO MAKE BLOOD DONATIONS?
- ◯ HAS YOUR MANAGEMENT ENDORSED THE LOCAL BLOOD DONOR PROGRAM?
- ◯ HAS YOUR COMPANY GIVEN ANY RECOGNITION TO DONORS?
- ◯ HAVE YOU INFORMED EMPLOYEES OF YOUR COMPANY'S PLAN OF CO-OPERATION?
- ◯ DO YOU HAVE A BLOOD DONOR HONOR ROLL IN YOUR COMPANY?
- ◯ WAS THIS INFORMATION GIVEN THROUGH PLANT BULLETIN OR HOUSE MAGAZINE?
- ◯ HAVE YOU ARRANGED TO HAVE A BLOODMOBILE MAKE REGULAR VISITS?
- ◯ HAVE YOU CONDUCTED A DONOR PLEDGE CAMPAIGN IN YOUR COMPANY?
- ◯ HAVE YOU SET UP A LIST OF VOLUNTEERS SO THAT EFFICIENT PLANS CAN BE MADE FOR SCHEDULING DONORS?

Remember, as long as a **single** pint of blood may mean the difference between life and death for **any** American . . the need for blood is **urgent**!



GIVE BLOOD

...give it again and again

NATIONAL BLOOD PROGRAM

Index to ADVERTISERS Keyed by PRODUCT

A HELP TO YOU. The reader will find that this unique TEXTILE WORLD index, particularly if consulted for two or more consecutive issues, affords a surprisingly complete source of information on the latest products and services available to the textile industry. Its comprehensiveness is the result of the fact that TEXTILE WORLD, having the largest circulation and highest readership of any textile-mill magazine in the world, carries the largest volume of advertising.

HOW TO USE. First, look in the table below and find the letter that designates the class of supply or service that you currently need. Then consult in the index the page numbers that are followed by that letter.

A. Air Conditioning, Air Cleaning
B. Building Construction and Maintenance, Paints, Yard Equipment, Water Supply
C. Chemicals and Dyestuffs
D. Cleaning Equipment
E. Dyeing, Finishing, and Cloth-Room Equipment and Supplies
F. Electrical Equipment—Motors, Controls, Lighting, Etc.
G. Fibers, Yarns, Mills, Finishing Companies
H. Fluid Handling.—Compressors, Pumps, Piping, Valves, Fittings
K. Instruments: Measuring, Metering, and Weighing Apparatus
L. Knitting-Mill Equipment and Supplies
M. Lubricants and Lubrication Equipment
N. Management Services—Factors, Consulting Engineers, Insurance, Personnel Facilities, Plant Sites, Etc.
O. Materials and components for Machinery and Equipment
P. Materials Handling, Packaging, and Shipping Facilities
Q. Power Generation and Transmission (see also Electrical Equipment)
R. Weaving and Warp Preparation Equipment and Supplies
T. Yarn-Production, Twisting and Winding Equipment and Supplies

An * indicates additional data in the 1952-53 Pre-Filed Textile Catalog. This index is published as a convenience to the reader. Great care is taken to make it accurate, but Textile World assumes no responsibility for errors or omissions.

Acme Steel Co.	239	P
Alemite Div., Stewart-Warner Corp.	146	M
Allen-Bradley Co.	Third Cover	F
Allen Mfg. Co.	272	O
*Allis-Chalmers Mfg. Co.	53 to 56	F Q
American Crayon Co.	284	F L R
American Cyanamid Co., Textile Resin Dept.	251	C
American & Efird Mills, Inc.	293	G
*American Lava Corp.	171	L RT
American Lumber & Treating Co.	206	B
*American Monorail Co.	52	O
American Schweiter Co.	19	T
American Viscose Corp. (Yarns)	155	G
American Viscose Corp., Textile Chemical Dept.	205	C
Antara Chemical Div., General Dyestuff Corp.	35	C
*Appleton Machine Co.	239	E
Armour & Co., Industrial Soap Dept.	86-87	C
Armstrong Cork Co. (Cots)	78-79	T
Armstrong Cork Co., (Roll Covering)	233	R
*Ashworth Bros., Inc.	36	T
Askania Regulator Co.	294	E
*Atkinson, Haserick & Co.	20 to 25	T
Atlantic Rayon Corp.	254	G
Baker & Adamson Products, General Chemical Div., Allied Chem. & Dye Corp.	201	C
Baldwin-Duckworth Div. of Chain Belt Co.	264	Q
Ballymore Co.	298	B
*Barber-Colman Co., Textile Div.	287	R
Barco Mfg. Co.	222	H
Barnes Textile Associates, Inc.	288	N
Bemis Bro. Bag Co.	200	P
Bendix Aviation Corp., Eclipse Machine Div.	198	T
*Bersworth Chemical Co.	278	C
Boger & Crawford	209	G
*Booth Co., Benjamin	186	T
Brush Electronics Co.	153	K
Bryant Chemical Corp.	142	C
*Buffalo Forge Co.	65	A
Buffalo Pumps, Inc.	263	H
*Butterworth & Sons Co., H. W.	132	E

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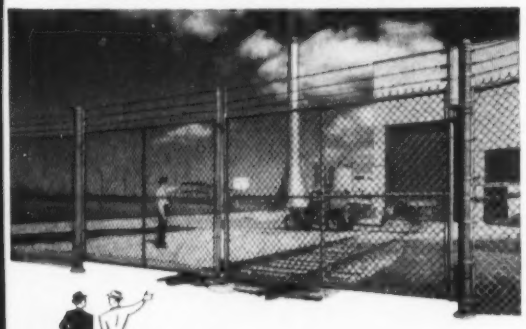

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*Caldwell Co., Inc., W. E.	295	B F
Carborundum Co.	190	R
Carniti & C., A.	43	T
Carpenter Steel Co., Alloy Tube Div.	253	H O
Celanese Corp. of America, Chemical Div.	255	C
Yarn Div.	215	G
Century Electric Co.	38	F
Chemsteel Construction Co., Inc.	294	B
Chesapeake & Ohio Railway	74	N
Cities Service Oil Co.	187	M
Clark Equipment Co., Industrial Truck Div.	218	P
Cleaver-Brooks Co.	157	Q
Clinton Foods Inc.	307	C
*Cole Mfg. Co., R. D.	248	B E
Colgate-Palmolive-Peet Co.	8	C
*Colson Corp.	250	P
*Continental-Diamond Fibre Co.	274	P
*Cook-P&N Machine Co., Inc.	144	E
*Crane Co.	70	H
Crane Mfg. Co.	262	L
*Crompton & Knowles Loom Wks.	13	R
Cross Cotton Mills Co.	140	G
Crucible Steel Co.	85	O
*Curtis & Marble Machine Co.	256	T
Dana Warp Mills	293	G
Daniels, Inc., C. R.	246	P
*Darnell Corp., Ltd.	244	P
*Dary Ring Traveler Co.	266	T
Dayton Rubber Co., The	62-63	RT
Deutscher, Spinnereimaschinenbau, Ingolstadt	39	T
Dixie Leather Corp.	136	R
Dow Chemical Co.	195	C
*Dow Corning Corp.	48	C
*Draper Corporation	1	R
*duPont de Nemours & Co., E. I. Dyestuff Div.	73	C
Electrochemicals Dept.	277	C
Textile Fibers Dept.	183	G
*Durant Mfg. Co.	236	K
Durkee-Atwood Co.	178	Q
*Economy Baler Co.	295	P
Edroy Products Co.	290	N
Eisenberg Fibers, Inc.	293	G
Elastic Stop Nut Corp. of America, AGA Div.	252	F
Emerson Apparatus Co.	258	K
*Emery Industries, Inc.	185	C
Fafnir Bearing Co.	71	O Q
Fairbanks, Morse & Co.	265	H
Falls Yarn Mills	256	G
Federal Fibre Corp.	258	P
Felters Co., The	196	L RT
*Fidelity Machine Co., Inc.	216	L
Fielden Inst. Div., Robertshaw-Fulton Controls Co.	220	K
*Fletcher Works	50	F
*Foster Machine Co.	75	T
Foxboro Co., The	82	K
*Frankl Associates, Ernest L.	296	R
Fuller Co.	229	P
*Fuller Brush Co.	280, 284, 308	T
Gair Co., Inc., Robt.	69	C
Gardner-Denver Co.	46	H
Gaylord Container Corp.	159	P
Geigy Co., Inc.	2	C
General Chemical Div., Allied Chemical & Dye Corp.	201	C
*General Electric Co.	189	F Q
Gladwin Plastics	297	T
Glasco Equipment Corp.	184	F
Globe Dye Works	224	G
Goodrich Chemical Co., B. F.	208	C
Goodyear Tire & Rubber Co., Chemical Div.	31	C
Graton & Knight Co.	136	R
*Grinnell Co., Inc.	12	H
Gulf Oil Corp.—Gulf Refining Co.	40-41	M
*Harwood & Son, Geo. S.	260	T
*Haskell-Dawes Machine Co., Inc.	258	T
*Heim Co., The	30	R
Heineman Corp., O., Div. of Aetna Industrial Corp.	219	G
Herbert Products, Inc.	296	T
*Herr Mfg. Co., Inc.	257	T
Hinde & Dauch	181	P
Hobbs Mfg. Co.	214	T
Holdsworth Gill Screw Co.	20-21	T
Hough Shade Corp.	248	N
Hubinger Co., The	267	C
Hunt Loom & Mach. Wks., Inc.	58-59	R
*Hunt Machine Co., Rodney, Textile Machinery Div.	81	E
*Huyck & Sons, F. C.	290	E
Hyatt Bearings Div., General Motors Corp.	57	O Q

*Ideal Industries, Inc.	227	T
Industrial Brush Co.	260	E
Industrial Heat Eng'g Co.	250	E
Industrie-Werke-Karlsruhe	309	E
*Ingersoll-Rand Co.	14	H
Ingolstadt	39	T
International Salt Co., Inc. Industrial Div.	269	C
Iselin & Co., Inc., Wm.	243	N
*Ives Co., L. T.	268	I
*Jenkins Sons Inc., M. W.	212	E
*Jiffy Textile Marker Co.	298	E I R
Johnson Service Co.	194	K
Keever Starch Co.	213	C
Kenwood Mills, Noone Industrial Fabrics Div.	290	E
Kessler Trucking Co.	262	P
*Kidde & Co., Inc., Walter	249	T
*Kidde Mfg. Co., Inc.	261	I
Kuljian Corp., The	210	N
*Lambeth Rope Corp.	295	RT
*Lane & Bros., Inc., W. T.	281	P
Lazenby Co., F. A., The	264	T
*Link-Belt Co.	7, 80	Q
*Loper Co., Ralph E.	294	N
Main Co., Chas. T.	297	N
Manhattan Rubber Div.	42	Q
McGraw-Hill Book Co.	283	N
*McKiernan-Terry Corp.	231	E
Meadows Mfg. Co.	28	Q
*Meese, Inc.	288	P
Mellor, Bromley & Co., Ltd.	238	I
*Merrow Machine Co.	188	E
Micro Switch Div.	226	F
*Milton Machine Wks., Inc.	297	R
Minneapolis-Honeywell Reg. Co. Micro Switch Div.	226	F
Müller, Jakob	296	R
National Aniline Div., Allied Chem. & Dye Corp.	17	C
National Ring Traveler Co.	235	T
Naugatuck Chemical Div., U. S. Rubber Co.	173	C
New Departure Div., of General Motors	15	O Q
Nopco Chemical Co.	10	C
Oakite Products, Inc.	291	C
Pabst Sales Co.	282	C
Page Fence Association	308	B
*Parks-Cramer Co.	217	A D
*Perfecting Service Co.	228	H
Permutit Co.	286	B
Pfister Chemical Wks.	293	C
Pfizer & Co., Inc., Chas.	177	C
Philadelphia Quartz Co.	256	C
Pittsburgh Coke & Chem. Co.	273	C
Pittsburgh Plate Glass Co., Fiber Glass Div.	223	G
*Platt Bros. (Sales) Ltd.	24-25	T
Platt Freres S.A.R.L.	230	T
Platt Ltd., J. W. & H.	230	T
Precision Gear & Machine Co.	280	Q
*Prince, Smith & Stells	22-23	T
*Proctor & Schwartz, Inc.	193	E
Products Sales, Inc.	295	T
Pure Oil Co.	175	M
Raybestos-Manhattan, Inc., Manhattan Rubber Div.	42	Q
Red Ray Mfg. Co., Inc.	292	E Q
Reeves Pulley Co.	211	Q
*Reiner Inc., Robert	16	I
*Rhoads & Sons, J. E.	5	QR
Richmond Oil, Soap & Chem. Co.	264	C
*Ridge Tool Co.	83, 192	H
*Robert & Co., Associates	2nd Cover	N
*Rohm & Haas Co.	47	C
Rome Soap Mfg. Co.	295	C
Ryerson & Son Inc., J. T.	134	O
*Saco-Lowell Shops	6	T
Sandoz Chemical Works	29	C
*Sargent's Sons Corp., C. G.	9	E T
Schenley Distributors, Inc.	197	N
Schlafhorst & Co., W.	11	RT
Schweiter Ltd.	19	T
*Scott Testers, Inc.	289	K
Scott & Williams, Inc.	283	R
Selig Co., The	310	D
Sinclair Refining Co.	72	M
Sobrook Machine Co.	246	F
Socony-Vacuum Oil Co., Inc.	51	M

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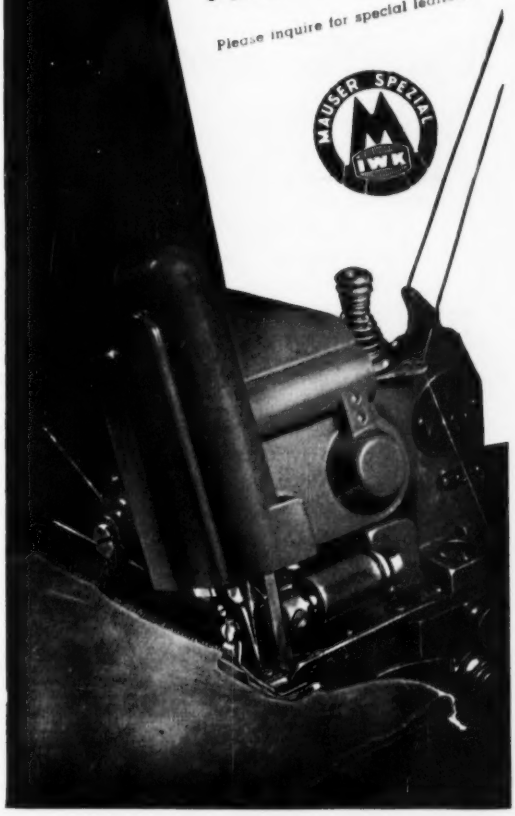

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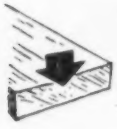

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Solvay Process Div., Allied Chem. & Dye Corp.	161	C
*Sonoco Products Co.	149	E T
*Southern Shuttles Div., Steel Heddle Mfg. Co.	270, 271	R
*Standard Pressed Steel Co.	245	O
Stanley Works, The	202	B
*Steel Heddle Mfg. Co.	270, 271	R
*Stephens-Adamson Mfg. Co.	207	O Q
*Stewart-Iron Works Co., Inc.	260	B
*Stop-Motion Devices Corp.	285	L
Sun Oil Company	130	C
Superior Combustion Industries, Inc.	285	Q
*Supreme Knitting Mach. Co., Inc.	162	L
Swift & Co., Soap Dept.	279	C
Taylor Instrument Cos.	84	K
Tennant Co., G. H.	234	D
Tennessee Corp.	281	C
*Terrell Machine Co., Inc.	26	RT
Textile Banking Co.	169	N
Textile Laboratories, The	296	E
*Textile Machine Wks.	66-67, 90	L
Tide Water Assoc. Oil Co.	138	M
*Toledo Pipe Threading Mach. Co.	276	H
Toledo Scale Co.	232	K
*Tompkins Bros. Co.	240	L
*Torrington Co., The (Needles)	27	L
*Torrington Co., The (Bearings)	225	Q
Tower Iron Works	242	E
Towmotor Corp.	199	P
Tranter Mfg., inc.	204	E O
Trust Co. of Georgia	289	N
Turbo Machine Co.	151	L
Unionmatex, Textilmaschinen-Union, G.M.B.H.	37	E RT
*US Bobbin & Shuttle Co.	203	RT
*U. S. Ring Traveler Co.	254	T
*U. S. Rubber Co., Naugatuck Chem. Div.	173	C
*Universal Winding Co.	32-33	T
Uster Corporation	64	K
*Veeder-Root, Inc.	4th Cover	K
Victor Ring Traveler Co.	34	T
*Warner Electric Brake & Clutch Co.	60-61	F Q
*Warner & Swasey Co.	76-77	T
Watson-Williams Mfg. Co.	298	R
Westinghouse Electric Corp., Lamp Div.	88	F
Motors & Controls Div.	44-45	F
Sturtevant Div.	68	A
Weston Electrical Inst. Corp.	247	K
West Pt. Fdry. & Machine Co.	241	R
White & Co.	182	A
Whitehead Engineering Co.	262	T
*Whitin Machine Works	49	T
Wildman Mfg. Co.	191	L
Wisconsin Cheese Box, The	292	N
*Wolf & Co., Jacques	259	C
Wood's Sons Co., T. B.	286	Q
Yale & Towne Mfg. Co.	221	P

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H. E. Hilty, Mgr.

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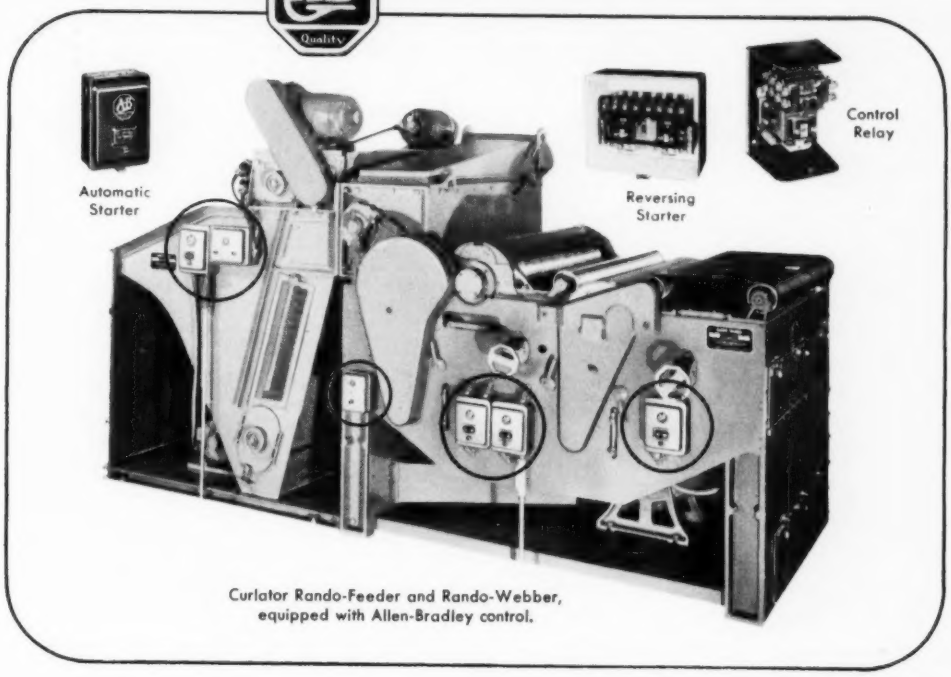

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TROUBLE FREE

Motor Control

This Curlator unit turns fiber waste into profitable products. It comes factory equipped with reliable Allen-Bradley control. ¶ FORGET OPERATING WORRIES AND MAINTENANCE COSTS—Allen-Bradley magnetic starters have only ONE moving part. This simplicity of design guarantees millions of trouble free operations. All Allen-Bradley controls are equipped with double break, silver alloy contacts which require no cleaning, filing, or dressing. You can install Allen-Bradley controls and forget them. ¶ THE ALLEN-BRADLEY LINE OF CONTROLS IS COMPLETE—Whether you need slow or quick starting or reversing, manual or automatic operation... the broad line of Allen-Bradley motor controls permits you to select the exact starter for your needs. ¶ WIDE ACCEPTANCE—Hundreds of thousands of Allen-Bradley controls in use is industry's stamp of approval. QUALITY—Try Allen-Bradley—you'll never regret it.

Allen-Bradley Co.
120 W. Greenfield Ave., Milwaukee 4, Wis.

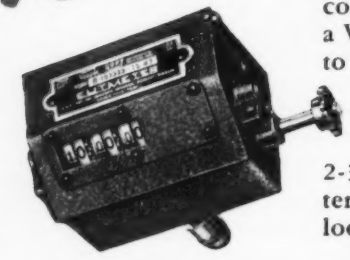
ALLEN-BRADLEY
QUALITY

MOTOR CONTROLS FOR TEXTILE MILLS

In Spinning...

New Veeder-Root 2-3-4 Convertible Hank Counters are easier to read, reset and maintain. And they are built to give you years of accurate facts-in-figures that help toward closer production *Count*rol.

Weaving...



Here's the combination to count on . . . *on every loom* . . . a Veeder-Root Cut Meter (left) to light a light or stop the loom at a pre-set woven yardage, *assuring uniform cuts of cloth* . . . and a new Veeder-Root 2-3-4 Convertible Pick Counter to keep accurate count of loom production on each shift.

Knitting...

For any type of knitting machine, Veeder-Root makes the counters you need to control your production. These new Revolution Counters, with the same advantages as the new 2-3-4 Convertible Hank and Pick Counters, can also be geared to record racks, or racks and tenths. In Fact, In Any Department of Any Type of Textile Mill . . .

VEEDER-ROOT

IS "THE NAME THAT COUNTS"

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GREENVILLE, S. C.
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